





PITMAN'S COMMERCIAL SERIES

# Commercial Geography

of

## The World

*NEW EDITION*  
*REVISED AND ENLARGED*  
1920

LONDON  
SIR ISAAC PITMAN & SONS, LTD., 1 AMEN CORNER, E.C.4  
BATH, MELBOURNE AND NEW YORK,

THIS book is also obtainable in two parts.  
Part I, Commercial Geography of the British  
Isles; Part II, Commercial Geography of  
the British Empire Abroad and Foreign  
Countries.





## PREFACE

Facts bearing upon the active commercial questions of the day brought within the scope of cheap text-books are sadly needed to fill up a gap in our educational literature.

Among these questions are the *routes* and growth of commerce, the *producing centres* and *markets* of the world, the *waterways* and *railways*, and the increase of commerce as seen in the growth of busy *commercial centres*. The staple *articles of commerce*, their relative value and importance, should also receive attention.

With a view of partly fulfilling this object we have prepared this text-book of Commercial Geography. The need of such a book has been felt for some time, and it is hoped that it will prove useful in giving some idea of the magnitude of the world's production, in showing the *interdependence of nations* for the necessities, as well as for the luxuries, of life; and in presenting many facts of practical value relating to commerce.

While commercial geography deals mainly with the interchange of commercial products, it is also essential that the student should know something about the countries and localities where the raw materials are found, how the latter are obtained, what the processes of manufacture are, and how interchange is effected.

The *physical features* of the different countries, as far as they influence the growth and distribution of commercial products, have been carefully considered.

The principal *commercial routes* by sea and the great trunk lines of railway are specially noted in the pages which follow, and these are illustrated by suitable sketch maps.

The *commercial statistics* are based upon the most recent returns of the Board of Trade, the year books of the Australasian colonies, the Canadian Government returns and the Annual Returns for India. They are given in the nearest approximate round numbers.

This book has been revised, and the information contained in it has been modified in the light of the events of 1914-1918. Maps have been introduced to show the provisions of the Peace Treaty, 1919.



# CONTENTS.

CHAP.	PAGE
Preface .. .. .	iii
I. Introductory .. .. .	1
II. The World Generally .. .. .	9

## BOOK I.

### THE BRITISH ISLES.

#### PART I.—COMMERCIAL PRODUCTS.

III. Common Metals and Minerals .. .. .	16
IV. Common Plants and their Commercial Products .. .. .	34
V. Commercial Products of Animal Origin .. .. .	55

#### PART II.—THE UNITED KINGDOM.

VI. Introduction .. .. .	65
VII. England and Wales .. .. .	67
VIII. Scotland .. .. .	80
IX. Ireland .. .. .	87
X. Manufactures of the United Kingdom .. .. .	93
XI. Means of Transport .. .. .	105
XII. Imports and Exports .. .. .	110
XIII. Commercial Towns .. .. .	112
XIV. Trade Routes .. .. .	123
XV. The British Empire .. .. .	129

## BOOK II.

### THE BRITISH EMPIRE ABROAD.

I. Naval and Military Stations .. .. .	133
II. Canada and Newfoundland .. .. .	139
III. Australia and New Zealand .. .. .	150
IV. The British Empire in Asia .. .. .	162
V. The British Empire in Africa, etc. .. .. .	174
VI. The British West Indies, etc. .. .. .	190

## BOOK III.

### FOREIGN COUNTRIES.

I. Europe generally .. .. .	195
II. The Republic of France .. .. .	201
III. The German Republic .. .. .	211
IV. The Kingdom of Holland .. .. .	221
V. The Russian Federative Republic .. .. .	228

CHAP.	PAGE
VI. The Kingdom of Belgium .. .. .	233
VII. The Kingdom of Spain .. .. .	237
VIII. The Kingdom of Denmark .. .. .	241
IX. The Scandinavian Peninsula .. .. .	244
X. The Kingdom of Italy .. .. .	247
XI. The Republic of Switzerland .. .. .	250
XII. The Republics of South-Eastern Europe .. .. .	253
XIII. The Republic of Portugal .. .. .	255
XIV. The Ottoman Empire .. .. .	257
XV. The Kingdom of Greece, etc. .. .. .	260
XVI. Asia generally .. .. .	264
XVII. The Japanese Empire .. .. .	268
XVIII. The Chinese Republic .. .. .	272
XIX. North America generally .. .. .	277
XX. The Republic of the United States .. .. .	281
XXI. Mexico and the Republics of Central America .. .. .	299
XXII. South America generally .. .. .	302
XXIII. The States of South America .. .. .	304
Index .. .. .	317

## COLOURED PLATES AND MAPS.

Ocean Currents .. .. .	} before p. 1
The World .. .. .	
Prevailing Winds .. .. .	
The World as Known in 1500 .. .. .	} between pp. 8 and 9
Eastern and Western Hemispheres .. .. .	
Northern and Southern Hemispheres .. .. .	
Drake's Voyage Round the World .. .. .	} 16 and 17
Coins and Cereals .. .. .	
Coins and Minerals .. .. .	
Commercial Plants .. .. .	32 and 33
Commercial Products .. .. .	40 and 41
Cochineal Insects on Cacti .. .. .	} 48 and 49
A Physical Map of the British Isles .. .. .	
Lumbering in Canada .. .. .	
Black Sable Trapping .. .. .	} 64 and 65
A Geological Map of the British Isles .. .. .	
Cod Fishing .. .. .	
Physical Map of the British Isles .. .. .	} 72 and 73
Map of the Minerals of South Britain .. .. .	
Physical Map of Scotland .. .. .	
British Isles with Neighbouring Parts of the Continent .. .. .	} 80 and 81
Physical Map of Ireland .. .. .	
Map of the Shannon Basin .. .. .	
The Black Country and Potteries .. .. .	} 96 and 97
Wales .. .. .	
The Railways of England and Wales .. .. .	
" " " Scotland .. .. .	} 104 and 105
" " " Ireland .. .. .	
The Thames Basin .. .. .	

## COLOURED MAPS.

The World .. .. .	..	after p. vi
Ocean Currents .. .. .	..	
Prevailing Winds .. .. .	..	
Map of Maritime Provinces of Canada		
" Dominion of Canada .. .. .	between pp. 148 and 149	
" Province of Ontario .. .. .		
" Eastern Australia .. .. .		
" Australasia .. .. .	" 156 and 157	
" New Zealand .. .. .		
" Asia .. .. .		
" India .. .. .	" 164 and 165	
" Railways of India .. .. .		
" Africa .. .. .		
" South Africa .. .. .	" 180 and 181	
" Egypt, etc. .. .. .		
" British West Indies .. .. .		
" France .. .. .		
" Europe .. .. .	" 204 and 205	
" Germany, Holland and Belgium		
" Routes to the Continent .. .. .		
" Railways of Europe .. .. .	" 220 and 221	
" Russia .. .. .		
" The Danube Basin .. .. .		
" Italy .. .. .	" 244 and 245	
" Scandinavia .. .. .		
" Spain and Portugal .. .. .		
" China and the East Indies .. .. .		
" The Near East .. .. .	" 268 and 269	
" Japan and Korea .. .. .		
" Routes to America .. .. .	" 284 and 285	
" Railways of North America .. .. .		
" United States—Mineral Regions		
" United States .. .. .	" 292 and 293	
" New York City & its Approaches		
" North America .. .. .	" 308 and 309	
" South America .. .. .		

## BLACK AND WHITE MAPS.

The Zones .. .. .	..	p. 15
South Lancashire with Manchester Ship Canal	..	p. 97
Suez Canal .. .. .	..	p. 127
Gibraltar .. .. .	..	p. 135
Straits of Gibraltar .. .. .	..	p. 135
Malta .. .. .	..	p. 136
The Canadian Pacific Railway .. .. .	p. 144 and 145	
Newfoundland and the Fishing Banks	..	p. 148
Tasmania .. .. .	..	p. 158
West Africa .. .. .	..	p. 175

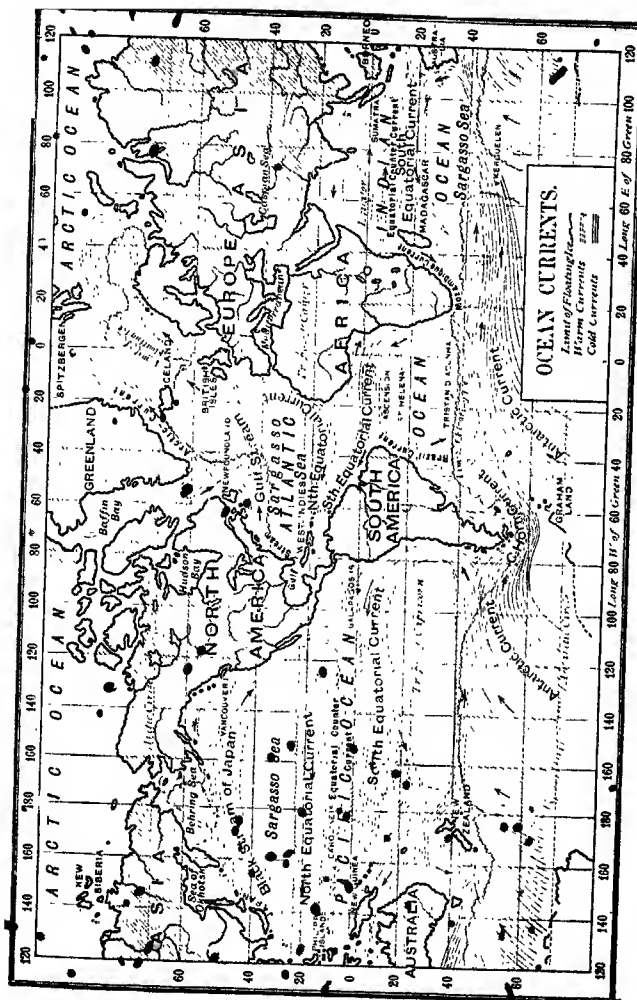
BLACK AND WHITE MAPS. (*Continued.*)

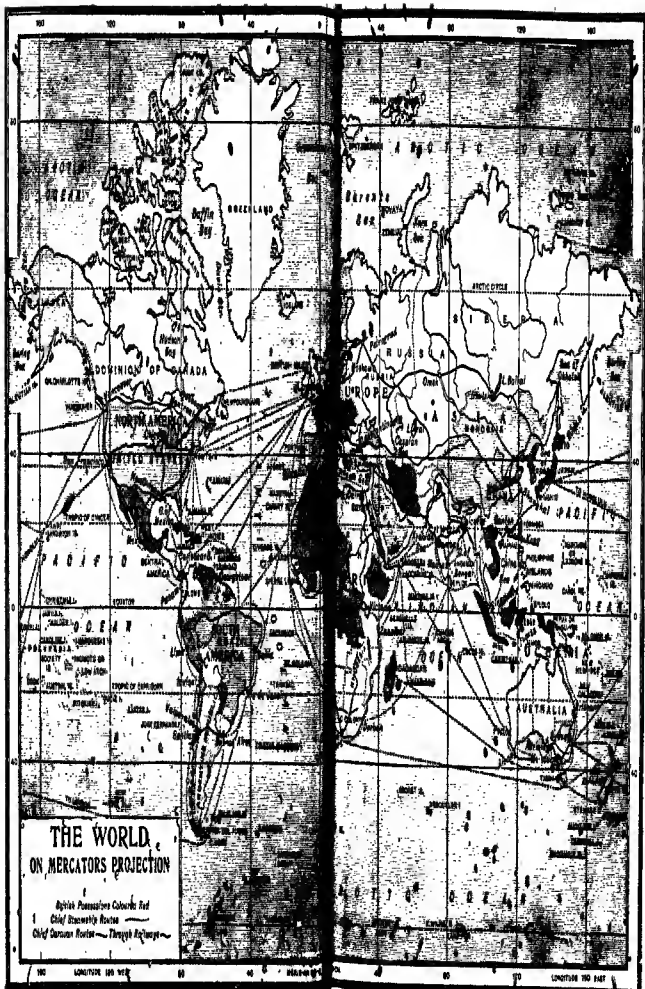
East Africa . . . . .	p. 185
The Rhine . . . . .	p. 198
The Channel . . . . .	p. 208
The Mediterranean . . . . .	p. 325

## END PAPERS.

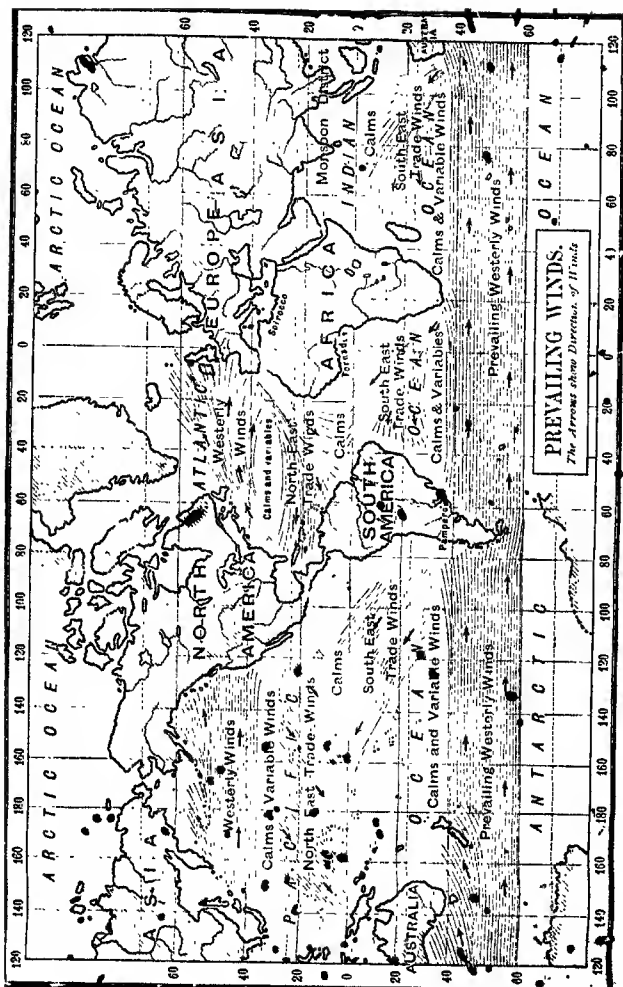
*Front:* Europe after the Peace of Versailles.

*Back:* 3. The Balkans. 4. China.









# PITMAN'S COMMERCIAL GEOGRAPHY.

## CHAPTER I.

### INTRODUCTORY.

**Definition of Commercial Geography.**—Commercial Geography deals

1. With the *position, configuration, climate* and *extent* of the various parts of the earth's surface and their influence on the prosperity of a country ;

2. With the *mineral, vegetable, and animal productions* of any country, stating where they are found, for what they are used, and how they are rendered of commercial value ;

3. With the *manufactures* of a country ;

4. With *means of transport*, both natural and artificial ;

5. With *exports and imports* ; and

6. With a consideration of *commercial towns*.

**Commerce.**—Commerce, in its most general sense, denotes the exchange of articles of any kind for money, or other articles. The origin of commerce must be sought in the infancy of society ; and must necessarily have been carried on at first by *barter*. Individuals, having more of any article than they required, endeavoured to find out others who were not only in want of it, but, at the same time, were in possession of something they themselves wished to obtain. As the population of a place increased, commerce extended, and various facilities for carrying it out were introduced.

The **Phoenicians** were among the first people of ancient times to devote themselves to commercial pursuits on a large scale, and they were also the first to make any great progress in navigation. In the sixth century before the Christian Era their commerce embraced the entire world as known at that

time, from India and Eastern Africa on one side, to Western Africa and Western Europe, including Britain, on the other. Tyre was then the chief commercial mart of the world.

The Carthaginians were Phœnicians by origin, and their commerce was of world-wide character, especially after the destruction of Tyre.

The Greeks, at an early period, showed considerable skill in commerce; *Athens* was the chief centre of their commerce, as well as of their arts and literature.

After the fall of the Roman Empire there sprang up in the north of Italy certain commercial republics, which held in their hands for several centuries the commerce of the world; the chief of these were *Venice* and *Genoa*.

About the middle of the thirteenth century the association of commercial towns known as the *Hanseatic League* was formed. At first consisting of *Lübeck*, *Hamburg*, and *Brunswick* only, it came in time to include upwards of sixty towns, among which were *Dantzic*, *Stettin*, *Königsberg*, *Riga*, *Amsterdam*, and *Cologne*; and this body continued in a state of union for three hundred years.

Portugal commenced to become a maritime power at the beginning of the fifteenth century when her sailors discovered *Madeira*, the *Azores*—the stepping-stone to *America*—and the *Cape of Good Hope* route to *India*; but the re-discovery of *America* by *Columbus*, at the end of that century, placed *Spain* first among commercial nations for a time.

In the sixteenth and seventeenth centuries the lead in commerce was taken by the *Dutch*; and in the eighteenth century by the *English*. At the beginning of the eighteenth century the mercantile navy of *England* amounted to two hundred and seventy thousand tons; in the middle of that century it exceeded six hundred thousand tons; and at the end of it had increased to nearly sixteen hundred thousand tons. In 1916 it exceeded twenty million tons. The *British Colonies* own considerably over one million tons; and just about half the world's tonnage flies the *Union Jack*.

**Kinds of Commerce.** There are five kinds of commerce.

1. *Home Trade*, or that carried on between people of the same country;

2. *Colonial Trade*, or that carried on between the inhabitants of a mother country and those of its colonies;

3. **Foreign Trade**, or that carried on *between people of different countries* ;

4. The **Carrying Trade**, or that conducted by a commercial country for some other country ;

5. **Entrepôt Trade**, or the importation of goods for the purpose of exportation afterwards.

**Currency**.—The circulating medium of a country, by which sales and purchases are made without resorting to barter, is called the currency of that country.

Depreciation, in commerce, is understood to have reference to the diminished value of coins, of bullion, or of a paper currency. The most notable case of depreciation in modern times is that of silver coin and bullion owing to the large supplies thrown on the market through its disuse as a legal tender in Germany and some other countries, while large supplies came over from America, for which there was no corresponding demand.

Among savage nations various kinds of articles have been used as circulating media ; but as nations advanced in civilisation, they have adopted the precious metals, *gold* and *silver*, coined into money, as their circulating medium. As the volume of trade increased, metallic currencies were found inconvenient, and *paper currencies* were resorted to.

In this country the currency includes not only the current coin of the realm, but also *Bank of England notes*. Currency differs from money in so far as it is applied only to what passes as money at a particular place and time.

**Decimal System**.—In many countries weights, measures and money are calculated by decimal division and multiplication. In French measures of length the Greek prefixes *deca* = 10, *hecto* = 100, *kilo* = 1,000, and *myria* = 10,000, are prefixed to the higher denominations, the unit of length being the *metre* of 39·37 inches. The lower denominations are marked by the Latin prefixes *deci* =  $\frac{1}{10}$ , *centi* =  $\frac{1}{100}$ , and *milli* =  $\frac{1}{1000}$ .

The unit of weight is the *gram*, which is equal to 15·43 grains ; but the *kilogram*, generally termed a "kilo," is the unit of commerce, and is equal to 2·2046 pounds avoirdupois.

The unit of capacity is the *litre*, which is equal to 1·76 liquid pints.

# COMMERCIAL GEOGRAPHY.

The table below gives approximate equivalents and Common Measures and Weights.

The *franc* of about 9½d. is the monetary unit of France, a *decime* being the tenth part of a franc, and the *centime* the hundredth part. Exchange value of £1 in francs at par = 25·2

In Belgium, Bulgaria, Finland, Greece, Italy, Rumania, Servia, Spain, and Switzerland the monetary system is like

METRIC.	COMMON.	COMMON.	METRIC.
Metre	1 <sup>1</sup> / <sub>10</sub> yard	Yard	1 <sup>10</sup> / <sub>11</sub> metre
Kilometre	5 furlongs	Mile	1 <sup>1</sup> / <sub>2</sub> kilometres
Sq. metre	1 <sup>1</sup> / <sub>5</sub> square yds.	Square yard	<sup>5</sup> / <sub>6</sub> sq. metre
Hectare	2 <sup>1</sup> / <sub>2</sub> acres	Acre	<sup>2</sup> / <sub>3</sub> hectare
Cu. cm.	<sup>1</sup> / <sub>10</sub> cubic inch.	Cubic inch	16 centimetres
Cubic metre	1 <sup>3</sup> / <sub>10</sub> cubic yds.	Cubic yard	<sup>1</sup> / <sub>3</sub> cubic metre
Litre	1 <sup>3</sup> / <sub>4</sub> pints	Pint	<sup>4</sup> / <sub>7</sub> litre
"	<sup>1</sup> / <sub>10</sub> dry quart	Dry quart	1 <sup>3</sup> / <sub>7</sub> litre
Hectolitre	2 <sup>5</sup> / <sub>8</sub> bushels	Bushel	<sup>1</sup> / <sub>17</sub> hectolitre
Gram	15 <sup>1</sup> / <sub>2</sub> grains.	Pound Av.	kilogram
Kilogram	2 <sup>1</sup> / <sub>5</sub> lbs. Av.	Pound Troy	<sup>5</sup> / <sub>13</sub> kilogram

that of France, the names of the coins, in most cases, being different. Thus, the *franc* of Belgium, the *leva* of Bulgaria, the *markka* of Finland, the *drachma* of Greece, the *lira* of Italy, the *ley* of Rumania, the *dinar* of Servia, and the *peseta* of Spain, are each of equal circulating value with the French franc.

The monetary unit of the German Empire is the reichsmark of 100 pfennige, equal to about 11½d. of our money. Hence the exchange value of £1 in marks is 20·4.

Nearly all the South American Republics issue coins corresponding in value with the five-franc piece of France. The circulating value of such coins is 3s. 11½d., or the exchange value of £1 is 5·05.

In India, the circulating value of the *rupee* has recently been fixed at 1s. 4d., that is, the number of rupees receivable for £1 at par is fifteen. This applies also to Ceylon and Mauritius.

# COMMERCIAL GEOGRAPHY.

The table below gives approximate equivalents and Common Measures and Weights.

The *franc* of about 9½d. is the monetary unit of France, a *decime* being the tenth part of a franc, and the *centime* the hundredth part. Exchange value of £1 in francs at par = 25·2

In Belgium, Bulgaria, Finland, Greece, Italy, Rumania, Servia, Spain, and Switzerland the monetary system is like

METRIC.	COMMON.	COMMON.	METRIC.
Metre	1 <sup>1</sup> / <sub>10</sub> yard	Yard	1 <sup>10</sup> / <sub>11</sub> metre
Kilometre	5 furlongs	Mile	1 <sup>1</sup> / <sub>2</sub> kilometres
Sq. metre	1 <sup>1</sup> / <sub>5</sub> square yds.	Square yard	<sup>5</sup> / <sub>6</sub> sq. metre
Hectare	2 <sup>1</sup> / <sub>2</sub> acres	Acre	<sup>2</sup> / <sub>3</sub> hectare
Cu. cm.	<sup>1</sup> / <sub>10</sub> cubic inch.	Cubic inch	16 centimetres
Cubic metre	1 <sup>3</sup> / <sub>10</sub> cubic yds.	Cubic yard	<sup>1</sup> / <sub>3</sub> cubic metre
Litre	1 <sup>3</sup> / <sub>4</sub> pints	Pint	<sup>4</sup> / <sub>7</sub> litre
"	<sup>1</sup> / <sub>10</sub> dry quart	Dry quart	1 <sup>3</sup> / <sub>7</sub> litre
Hectolitre	2 <sup>5</sup> / <sub>8</sub> bushels	Bushel	<sup>1</sup> / <sub>17</sub> hectolitre
Gram	15 <sup>1</sup> / <sub>2</sub> grains.	Pound Av.	kilogram
Kilogram	2 <sup>1</sup> / <sub>5</sub> lbs. Av.	Pound Troy	<sup>5</sup> / <sub>13</sub> kilogram

that of France, the names of the coins, in most cases, being different. Thus, the *franc* of Belgium, the *leva* of Bulgaria, the *markka* of Finland, the *drachma* of Greece, the *lira* of Italy, the *ley* of Rumania, the *dinar* of Servia, and the *peseta* of Spain, are each of equal circulating value with the French franc.

The monetary unit of the German Empire is the reichsmark of 100 pfennige, equal to about 11½d. of our money. Hence the exchange value of £1 in marks is 20·4.

Nearly all the South American Republics issue coins corresponding in value with the five-franc piece of France. The circulating value of such coins is 3s. 11½d., or the exchange value of £1 is 5·05.

In India, the circulating value of the *rupee* has recently been fixed at 1s. 4d., that is, the number of rupees receivable for £1 at par is fifteen. This applies also to Ceylon and Mauritius.

## COMMERCIAL GEOGRAPHY.

3. The *Corn Exchange*, in Mark Lane ;
4. The *Hop Exchange*, in Southwark Street ;
5. The *Mart*, Tokenhouse Yard, where houses and land change hands ;
6. The *Royal Exchange*, near the Bank of England ;
7. The *Stock Exchange*, in Capel Court, Bartholomew Lane, the great money market of the world ;
8. The *Wool Exchange*, in Colman Street ; and
9. The *Baltic Exchange*, in St. Mary Axe.

There are also Exchanges in some of the other large commercial towns of the United Kingdom, as Liverpool, Manchester, Leeds, and Glasgow.

**Manufactures.**—The circumstances which tend to the success of manufactures in a particular country may be divided into two classes, physical and political.

Among the more prominent of the **physical circumstances** are

1. *Readiness of access to supplies of raw material.* When the raw material has to be brought from a distance, its cost, particularly if it is of a bulky or heavy nature, will be very much increased, and so, consequently, will the cost of the manufactured article.

2. Even more important than the possession of the raw material close at hand is the *command of water power or fuel* for carrying on the industry. To our valuable mines of coal, more than anything else, is this country indebted for her huge manufacturing industries.

3. The *climate* of a country has also an important influence over manufacturing industry. No country in the world can produce cotton yarn as good as that spun in the moist climate of South Lancashire.

4. The *situation* of a country for commerce has an influence over its productiveness in manufactured goods. In the case of our own and other countries this will be discussed in future pages.

5. The possession of *rivers*, which may serve as cheap means of conveyance, has an influence on the manufactures of a country ; but this must also be left for future consideration.

Among the **political circumstances** which contribute to the progress of manufacturing industries are

## INTRODUCTORY.

1. *Security of property* ;
2. *Freedom* to carry on the various operations of manufacture ;
3. *Absence of monopolies* ; and
4. The *non-interference* of government in industrial undertakings.

**Imports and Exports.**—*Imports* are goods received from another country.

*Exports* are goods sent out to another country.

**The Golden Rule of Commerce.**—Trade is simply barter or exchange between nations, and for every pound's worth of goods imported into this country we must export an equal value, unless these goods have been sent to us in payment of debt ; and, conversely, for every pound's worth of goods we export, unless in payment of debt, there must be a corresponding import. This may be considered the Golden Rule of Commerce.

The above statement is true in spite of the fact that the annual value of our imports exceeds that of our exports by about one hundred and seventy millions sterling.

The excess of imports into this country is nothing new. If the imports and exports of all the countries of the world are added together, there will be a balance in favour of imports, because they are valued at the place of arrival, while exports are valued at the port of departure, so to the first value of the imports the cost of conveyance has always to be added. Naturally, therefore, a country like the United Kingdom shows an excess of imports. Other reasons for the excess of imports are :—

1. The United Kingdom is a ship-owning country, which does a large business all over the world in carrying goods and passengers. This work is really, in itself, of the nature of an export.

2. The United Kingdom earns large commissions on the trade of other countries, as a trader or middleman.

3. The United Kingdom is a country that has become entitled to the receipt of large interests and profits from other countries on account of capital which it has invested, and business which it carries on in those countries. Included in this are the sums receivable by British subjects in the service of a dependency such as India.



The above considerations probably amount to the following sums—

Earnings of ships ..	£75,000,000
Commissions ..	20,000,000
Profits, interest, etc. ..	90,000,000

Total £185,000,000

France and Germany are both countries with an *excess of imports*. In the United States, on the contrary, there is a *great excess of exports*, which has increased very much during recent years, and now amounts to over five hundred millions sterling. This excess of exports is accounted for in various ways, principally by the facts set out below.

1. The United States is an indebted country, so that it has interest to remit to European countries.

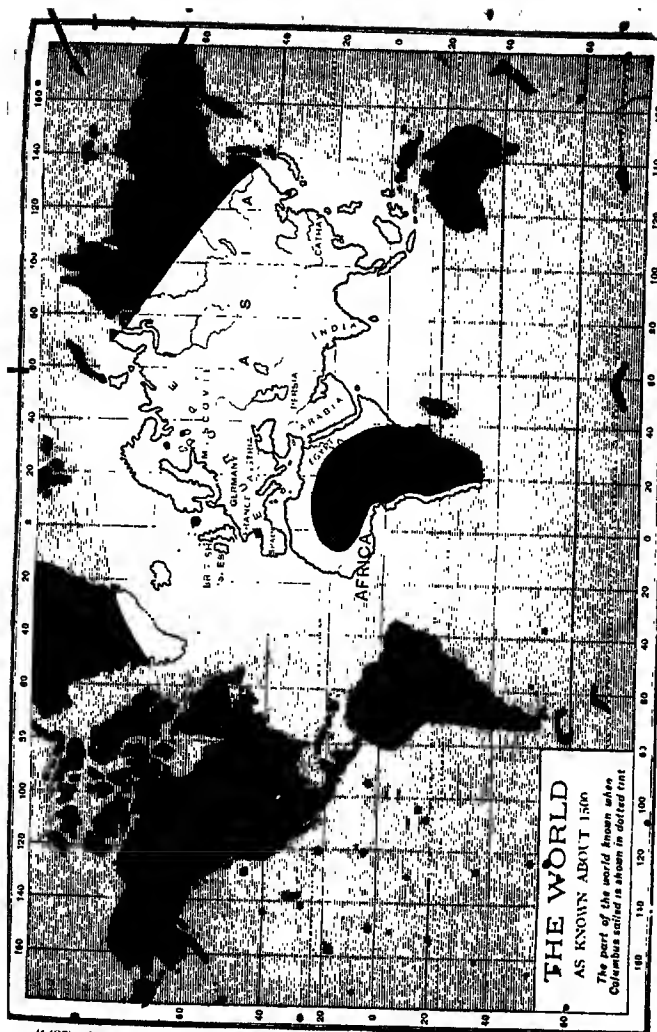
2. The United States has to pay, principally to the United Kingdom, for the conveyance of goods and passengers in the foreign trade.

3. The nominal excess is also greater than it would otherwise be, in consequence of imports in the United States being valued, not at the place of arrival, but at the place of departure, so that the imports do not appear as large as they really are.

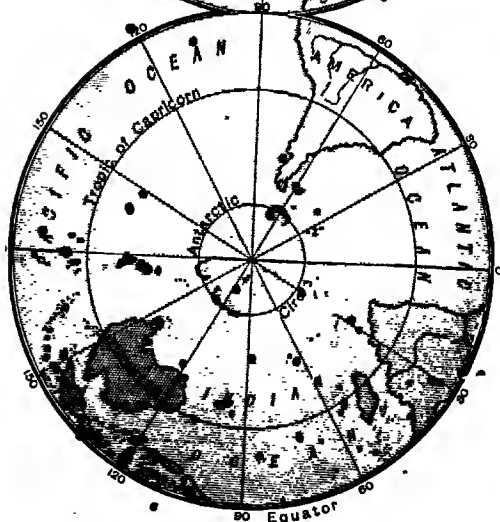
The commerce of the world is estimated at the annual value of six thousand millions sterling, the surplus productions of one country being employed to satisfy the necessities or luxuries of another. This commerce is hindered in some countries by protective tariffs and by the bounty system. *Free trade* prevails in the United Kingdom and India. *High protective tariffs* interfere with the trade of most of the European countries, the United States, and the chief British colonies. Germany and France used to give a *bounty* on every ton of beet-root sugar exported.

**Leading Commercial Countries.**—The nine leading commercial countries of the world in the year 1914, arranged according to the amount of shipping, were

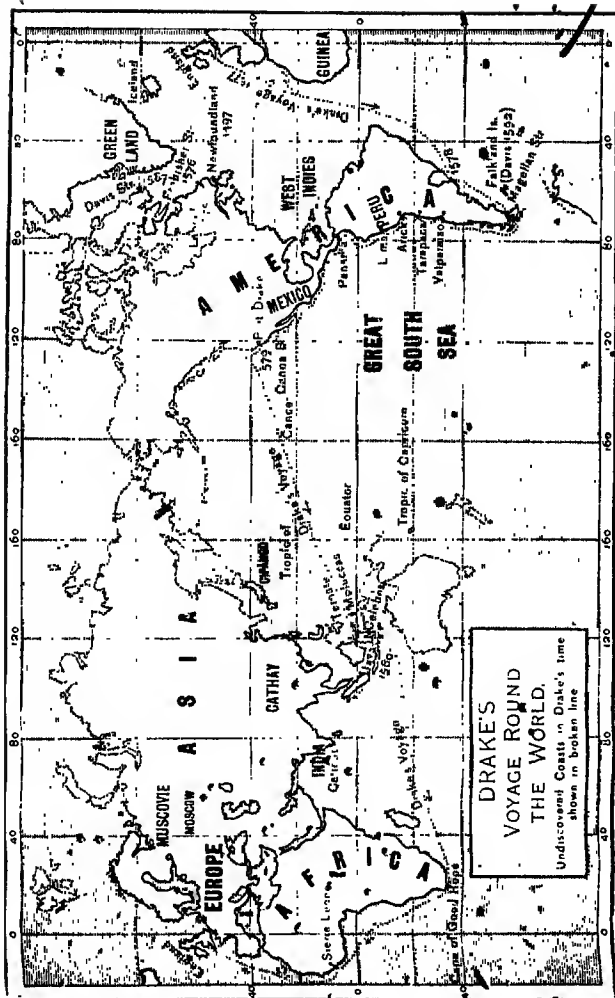
(1) The United Kingdom, owning nearly half of the tonnage of the world; (2) Germany; (3) The United States; (4) France; (5) India; (6) Netherlands; (7) Belgium; (8) Canada; (9) Russia.







SOUTHERN HEMISPHERE.



## CHAPTER II.

### THE WORLD GENERALLY.

BEFORE passing on to consider the commercial geography of separate countries in detail, it will be well to gain some idea of how the land and water are distributed over the surface of the earth.

The surface of the globe is generally divided into two equal portions, called *hemispheres*. According to one method of division, these are the *Eastern Hemisphere*, or Old World, because it was the first to be settled, and the *Western Hemisphere*, or New World, because it was not settled until modern times. In this method of division, the meridian twenty degrees west of Greenwich, or the Iceland meridian, is taken to separate one-half of the world from the other. This is a very convenient arrangement, as it places the four grand divisions of Europe, Asia, Africa and Australia in the Eastern Hemisphere, and North and South America in the Western Hemisphere.

If the equator is taken as the dividing line, we obtain a *Northern Hemisphere* and a *Southern Hemisphere*; and a glance at the chart of these shows how much more land there is in the northern than in the southern half of the globe.

If a globe is turned so that London is the centre of one half sphere, it will be seen that that hemisphere contains nearly all the land upon the earth's surface, and the opposite one, with New Zealand in the centre, nearly all the water. They are therefore called the *Land Hemisphere* and the *Water Hemisphere*.

**Cylindrical Projection of the Earth's Surface.**—The whole surface of the earth can be shown in one view by representing it as if it were unrolled from a cylinder. This kind of map is usually constructed for commercial purposes, as it shows the direction of one place from another very clearly. Such a map of the world will be found at the commencement of this book. From such a map it is plainly seen that the land is chiefly grouped in two large masses. It will also be noticed, that the land runs into sharp-pointed peninsulas towards the south, while the oceans are narrowest

towards the north. On such a map the northern and southern parts of the earth's surface are exaggerated in size.

**The Oceans.**—Europe and Africa are separated from North and South America by the **Atlantic Ocean**, which, although one of the narrowest of the five, is the great highway of commerce, and is constantly being crossed by both steamships and sailing vessels. Fine steamships now cross the three thousand miles between *Liverpool* and *New York* in less than five days, travelling over twenty-five miles an hour.

The **Pacific Ocean** is twice as large as the Atlantic, but it has very much less commerce. Lines of steamers run from *Vancouver City*, in Canada, and from *San Francisco* and *Seattle*, in the United States, to *Japan* in from fourteen to seventeen days, and thence to *China* in less than twenty days from America, the distance being about six thousand miles. Steamship lines also run from *Vancouver City* and *San Francisco* to *Australia* and *New Zealand*.

The **Arctic** and **Antarctic Oceans** are very unimportant commercially, because the greater parts of them are covered with ice all the year round. Only one ship has ever passed round the northern shores of America, the *Investigator*, commanded by Captain McClure, in the year 1850; and only one has yet passed round the northern coast of Europe and Asia, the *Vega*, under Captain Nordenskjöld, in the year 1880.

**Round the World.**—The quickest route round the world from London would be from *London* to *Liverpool* by train, from *Liverpool* to *St. John (N.B.)* by boat (seven days); across Canada by train to *Vancouver City* (five days); thence by boat to *Yokohama* on the Pacific side of *Japan* (fourteen to fifteen days); from *Yokohama* by train to *Tsuruga*, the Japanese port for *Siberia* (ten hours); from *Tsuruga* to *Vladivostok* (thirty-eight hours); from *Vladivostok* by the Trans-Siberian railway to *Moscow* (ten and a quarter days); *Moscow* to *London* via *Flushing* and *Queenboro'* (three and a half days). There are other ways of going round the world, but they are longer than the one given above. By taking the fastest steamers and trains it is possible for a person to travel round the world in forty days. On the westward route better connections can be made than on the eastward.

**Uses of the Ocean.**—The chief uses of the ocean are set out below.

All life owes its existence to the ocean, because the vapour which is constantly rising from its surface is carried by the winds to the land, where it falls as mist or rain.

2. Hot winds are cooled and cold winds are generally warmed by passing over the oceans.

3. Countries near the sea do not generally suffer from such extremes of heat and cold as those which are further away from it.

4. The sea supplies us with a variety of food. Cod, mackerel, salmon, herrings, sardines, oysters, and many other animals come from the sea, providing a large part of the food eaten by man.

5. Most men who go to sea do so to carry articles of food and clothing from one country to another. The ocean is the highway for ships; a few very important ocean routes are shown in the following table:—

#### Important Ocean Routes.

1. From London to		2. From Liverpool to	
Adelaide	Orient Line, etc.	Alexandria	Moss Line
Auckland	" "	Bahia	Royal Mail
Baltimore	Atlantic Transport	Baltimore	Allan Line
Bombay	P. & O., etc.	Barbadoes	Pacific Line
Boston (U.S.A.)	Leyland	Boston	Cunard Line, etc.
Brisbane	P. & O., etc.	Brisbane	Houlder Line
Calcutta	" "	Calcutta	Anchor Line
Cape Town	Union-Castle Line	Callao	Pacific Line
Colombo	P. & O., etc.	Colombo	Bibby Line
Constantinople	Westcott Line	Constantinople	via London
Delagoa Bay	Union-Castle Line	Halifax (N.S.)	Allan Line, etc.
Hobart	P. & O., etc.	Haiti	Pacific Line
Hong Kong	" "	Hong Kong	via London
Lisbon	Gen. Stm. Nav. Co.	Lisbon	Pacific Line
Madras	P. & O., etc.	Madeira	African Line
Malta	" "	Malta	Cunard Line
Melbourne	Orient Line, etc.	Melbourne	Houlder Line
New York	Atlantic Transport	New York	Cunard Line, etc.
Philadelphia	" "	Philadelphia	Allan Line
Quebec	Allan Line	Quebec	Allan Line
Singapore	P. & O., etc.	Rio de Janeiro	Holt Line
Sydney	" "	Singapore	via London
Wellington (N.Z.)	" "	Vera Cruz	Pacific Line
Yokohama	" "	Yokohama	via London



**Steamship Lines.**—The most important British Steamship Lines are the Allan, Atlantic Transport, Anglo-Saxon Petroleum, Ellerman & Bucknall, British India, Canadian Pacific, City, Clan, Cunard, T. & J. Harrison, Elder Dempster, Ellerman, Furness, Houlder, Leyland, Lamport & Holt, Alfred Holt, New Zealand, Prince, Pacific, Peninsular and Oriental, Harrison, Ropner, Radcliffe, Royal Mail, Union-Castle, White Star, Wilson, Andrew Weir, Shaw, Savill & Albion, Ham, and Federal S.N.

**The Zones.**—The surface of the earth may be divided into belts according to the amount of heat received from the sun's rays. The part of the earth for about twenty-three and a half degrees on either side of the equator receives daily the greatest amount of heat, and is therefore called the **Torrid Zone**. Both animal and vegetable life is very abundant in this belt. The *largest land animals* live in the hot countries; here are found the elephant, lion, tiger, giraffe, and hippopotamus. Palms, baobab, banyan, banana, rubber, teak and mahogany trees flourish in the torrid zone.

Two cold circles having for their centres the north and south poles form the **Frigid Zones**. Here, instead of fine forests of noble trees, little grows except mosses, lichens, shrubs, and dwarf trees. The land *animals* are the reindeer, musk ox, and white bear; but the aquatic animals are of much greater importance, including the whale, walrus, and seal.

The two **Temperate Zones** lie between the very hot and the very cold parts of the earth. They contain *hardy forest trees*, and nearly all those *plants* most used by man as food, or as *materials for manufactures*—such as the cereals, potatoes, the vine and useful fruits, and the three most important fibre plants—flax, hemp, and cotton. The *animals* most useful to man, such as the horse, ox, sheep, pig, and dog are also found here. The *birds* are noted for their splendid powers of song, although their sober plumage contrasts gloomily with the brilliant hues of tropical birds; and here also is the home of the honey bee and the silk-worm.

**Climate.**—The *average weather* at any place for a long period of time is called its Climate. The two chief considerations are heat and moisture.

The first and strongest cause affecting the temperature of a place is its distance from the equator, *i.e.*, its latitude, because

that determines the amount of heat that place receives from the sun. This is clear from what has been said about the zones.

The higher we go above the sea level the colder the air becomes; until at length, upon the highest mountains, we find perpetual snow and ice even under the equator. Thus we see that temperature varies with the altitude.

When there is a great difference between the summer and winter temperatures the climate is said to be *extreme*. In the temperate zones, countries far from the influence of the sea generally have an extreme or continental climate with hot summers and cold winters. In the Sahara and similar deserts there are great extremes of temperature between day and night.

The most equable climates are found in the moist equatorial regions, where the difference between the hottest and coolest months is hardly noticeable, in small islands in mid-ocean, and in countries bordering great oceans and having their prevailing winds from the ocean.

The sea abounds in great rivers, or ocean currents, as they are called, which have the effect of lowering or raising the temperature of the lands by which they flow, when the wind blows from the sea, and so affecting their climates. By the eastern coast of North America flows an icy current from the Arctic Ocean past Labrador and Newfoundland, rendering the air raw and foggy, closing the harbours with ice, and causing the vegetation to be poor and scanty.

The most noted of these ocean currents is the *Gulf Stream*, which, commencing in the Gulf of Mexico, passes round the southern point of Florida and along the eastern coast of the United States as far as Nova Scotia. Crossing the Atlantic Ocean, and spreading out like a fan, its speed and temperature are diminished and it is known as the Gulf Stream Drift or North Atlantic Drift. It continues its course between Great Britain and Iceland, along the coast of Norway, to be lost in the Arctic Ocean. The Gulf Stream is a large moving body of warm water, which carries heat and moisture to the western coast of Europe, keeping those shores free from ice, and clothing the land with verdure.

There is, in the Pacific Ocean, another current, almost as large and important as the Gulf Stream. This is the *Japan*

*Current*, so called from the land near which it commences; it determines the climate of the western coast of North America, making it much warmer and more moist than it would otherwise be.

Some regions have a damp climate, and others a dry climate. The dampest climate is endured by the place which has the most rainy and foggy days in the year and not necessarily where the amount of rain is greatest. The dampest regions of the world are the steaming forests and jungles of equatorial countries, where heavy rains fall throughout the year. In the temperate zones the dampest regions are where the westerly winds blow almost continually from across the ocean as in the west of the British Isles.

Dry climates generally exist, except on the equator, in those parts which are farthest from the influence of the sea, either because of the distance or because the sea winds are not felt.

Winds which blow from a warmer region to a colder one, or from the sea to the land, are, as a rule, *moist*, rain-giving *winds*. Those which blow from a colder to a warmer region are mostly *dry winds*.

In summer, the land is warmer than the adjoining sea; in winter, the sea is warmer than the adjacent land; hence, islands and other places near the sea have a more equable climate than those inland. Such a climate is said to be *insular*, from the Latin *insula*, an island.

Mountains may modify climate by affording *shelter*. Every range of mountains has a warm and a cold flank.

Conditions of Commercial Prosperity.—1. A great commercial country must be situated in the temperate or torrid zone, so that its harbours are open to commerce all the year round.

2. It must have an *extended coast-line*, furnished with good harbours, so that carriage may be cheap; for land carriage is always expensive.

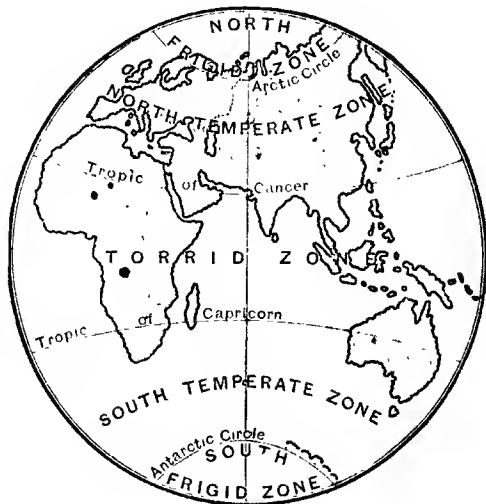
3. It must have *surplus products* to dispose of; these may be mineral, agricultural, or manufactured products.

4. It must possess *cheap means of internal transit*, either a good network of railways or a complete system of navigable rivers and canals connecting its industrial centres with its ports.

5. It must have a store of *surplus wealth*, in order to be able to take advantage of any circumstance in favour of its commerce.

6. It must be *favourably situated*, conveniently for other commercial countries.

## THE ZONES.



## PART I.—COMMERCIAL PRODUCTS.

### CHAPTER 'III.

#### COMMON METALS AND MINERALS.

**Aluminium.**—This metal has of recent years obtained deserved recognition as one of special usefulness in the arts, through the triple qualities it possesses of extreme malleability, ductility, and lightness in weight. It is, in fact, the lightest metal of commercial importance. The pure metal, which is not found native, has a less weight than that of ordinary limestone, or calcite, its specific gravity being rated at 2.5.

Possessing the needful strength, aluminium is exceedingly valuable in the construction of articles where light weight is specially needed, such as military and naval equipments; surveying instruments; racing and other boats, even to steam-launches; field glasses, and other scientific instruments. Aluminium is moreover non-oxidisable, and readily lends itself as an alloy to iron, copper—aluminium bronze—and other metals.

The chief source of commercial aluminium is found to-day in the minerals *Cryolite* and *Beauxite*<sup>1</sup>; but the metal is also found in the common earths, clays, shales, and muds by which we are almost everywhere surrounded, and in the felspar and mica of granite and similar rocks; these being, in the main, silicates of aluminium.

Unfortunately, the metal in these compounds cannot be profitably extracted by the methods at present in use. The advance in the aluminium industry may be inferred from the circumstance that, whereas about forty years ago the cost of the metal per pound was over £5, the same quantity can now be bought for less than 4s. The British Aluminium Co. extracts the metal from its ore by water power at Kinlochleven.

**Amber.**—Found as a mineral, but strongly resembling in appearance various gum-resins, amber is the fossil resin of one

<sup>1</sup> See Common Minerals, Plate I, Nos. 1 and 2.



THE CHINESE TARI



THE FRENCH NAPOLEON.



THE ITALIAN LIRA.

# MODERN COINS

*Actual size.*



I. Bearded Wheat.

II. Wheat.

III. Barley.

IV. Oats.

V. Maize.

or more coniferous trees belonging to a vegetation now extinct.

Amber is found in drops, leaf-like and stick-shaped pieces, the form and condition depending probably on the mode and situation of its exudation from the trees. In many instances the fragments of amber contain well-preserved remains of the animals and plants which lived at the period of its formation, these having been enclosed by the fluid resin as it escaped from the tree.

**Antimony.**—In the native form, antimony occurs but sparingly. It is a bright tin-white substance, with a metallic lustre, and of only moderate hardness. The antimony of commerce is obtained from the sulphur ore of the metal, antimony glance or *Stibnite*,<sup>1</sup> of which Japan formerly furnished the largest supply as well as the most beautiful specimens. These are elongated prismatic crystals of a bluish-grey colour, having a brilliant lustre. Austria-Hungary, Germany, and Sarawak now furnish the chief supplies.

Antimony is mainly useful in the arts through the alloys which it forms with lead and tin, imparting to both greater hardness and durability. *Type metal* is a compound of lead and antimony; and *Britannia metal* is an alloy of tin and antimony.

**Arsenic.**—Like antimony, arsenic is rarely found pure in nature. It is a tin-white substance, with a metallic lustre. The arsenic of commerce is obtained principally from its two sulphur ores, *Realgar*<sup>2</sup> and *Orpiment*; the former being of a beautiful red colour, the latter golden-yellow. Both of these, although by no means abundant minerals, occur native, and may generally be recognised by their distinctive colouring, lustre, and exceeding softness.

The compounds of arsenic are extensively used in the manufacture of pigments. In the making of rifle bullets and gun-shot a small quantity of arsenic is added to the lead to give it greater hardness. The white arsenic of the druggist is the oxide of the metal, obtained by roasting the mineral known as *Mispickel*,<sup>2</sup> the sulphur-arsenic ore of iron. Arsenic is found in Cornwall and Devonshire, especially near Tavistock.

<sup>1</sup> See Common Minerals, Plate I, No. 3.

" " " Plate II, No. 12.

3--(1482)



**Asphalte.**—Asphalte is a bituminous substance, produced from coal by the action of heat. The most remarkable deposit of this substance is in the island of Trinidad, in the West Indies, where there is a noted "pitch lake" ninety-nine acres in extent and of unknown depth.

The *asphalte stone*, so largely used for paving, is limestone charged with bitumen. The best quality of this substance is obtained from the *Val de Travers*, in the Swiss canton of Neuchâtel.

**Building Stones.**—There are many kinds of stone used for building purposes, differing greatly in quality and durability. Two kinds much used for ornamental work are the oolitic limestones of *Bath* and *Portland*. The former is of a rich cream colour; the latter is lighter in colour and harder.

The limestone found at *Purbeck*, in Dorsetshire, and on the coast of Devonshire, furnishes handsome slabs of black, red, and grey marble, veined with white. These slabs are cut and polished for mantelpieces and such-like articles.

Sandstones of various kinds, such as the old and new red sandstones, are also used for building. Noted British sandstones are those of *Craigleith*, near Edinburgh; *Darley Dale*, near Bakewell; *Heddon*, near Newcastle-on-Tyne; and *Mansfield*, in Nottinghamshire.

On *Dartmoor*, in Devonshire; near *Aberdeen*, and at *Peterhead*, in Scotland, granite is obtained, which is hard and difficult to work, but which owing to its great durability is well adapted for the pavement of streets, for bridges, and the basements of public buildings.

**Chalk.**—Chalk does not differ greatly from ordinary fine grained limestones, except that it is soft and powdery. It is of the class which geologists call *earthy limestones*; and when an acid is applied, it effervesces like almost every other form of limestone.

It was a happy inspiration which prompted a distinguished naturalist to put a morsel of washed and powdered chalk into the field of his microscope. He saw that the greater part of it consisted of a multitude of tiny shells, some of them so minute as to escape detection by the naked eye. Some of them again were about the size of the eye of a fine needle; others, perhaps, as large as the head of a pin. They are all of them the remains of very nearly the lowest of organisms,

which, while they have hard parts, are practically destitute of organs. Naturalists call them *foraminifera*, a name meaning hole-bearers, from the number of minute openings or pores which their shells contain. Through these openings in the living state, the animal protrudes delicate projections of the body, which help to propel it about, and probably bring to it a supply of food. These minute animals are very numerous in the seas of the present day. When they die, their empty shells falling to the bottom make grey mud, called *ooze*, which is being formed there. From this and a number of other circumstances, we conclude that the great chalk deposits of the globe, like those which extend almost continuously from the picturesque cliffs of England and France, to and through Russia, represent an ancient sea-bed very much like that which is found to-day in the deep ocean.

Of our supplies of chalk for commercial purposes about two-thirds are derived from Kent, the remainder being quarried chiefly in Surrey, Essex, Hampshire, Sussex, Bedfordshire and Lincolnshire.

**Clay.**—Clay for manufacturing purposes is procured from several parts of the United Kingdom. Thus Cornwall is noted for *china clay*; Staffordshire for *potters' clay*; Stourbridge and Sheffield for *fire-clay*; and Devonshire for *pipe-clay*. The granite rocks of Dartmoor and Cornwall yield *kaolin*; Surrey and Somerset are noted for *fuller's earth*. The best bricks are made from the exceedingly fine clays of the glacial drift.

**Coal.**—Although classed, from its mode of occurrence in nature, in the mineral kingdom, coal is in nearly all cases of vegetable origin. The degree, however, in which traces of organic structure may be detected in it varies extremely. Coal may be either tolerably pure, containing but slight admixture of earthy matters, or it may contain large quantities of earthy substance, as in the various modifications of shales. In the next place, the degree of change which has taken place in the vegetable matter may be equally varied, so that we have it still retaining its structure very evidently, as in lignites, or with the structure greatly destroyed, or altogether lost, as in much ordinary coal and anthracite, which, however, are apparently of somewhat different origin from the more recent lignites. The old coal-beds appear to have been formed from

deposits analogous to our peat-bogs, and hence naturally consist in great part of vegetables whose remains soon became indistinguishable; but that arborescent vegetation was also present, and contributed to form the coal, seems proved by the detection of woody structure, which is even evident to the naked eye, in the charcoal-like appearance of the fractured surface of coal. In many lignites the coal consists of trunks of trees converted into coal without much alteration in the appearance of the texture of the wood; and in these the structure is very readily made out by means of the microscope.

The most extensive coal-beds of the world, those for example of North America east of the Rocky Mountains, and of Great Britain, belong to what is known by geologists as the Carboniferous era. But from that period to the present, coal has been forming almost continuously in one region or another, frequently not passing beyond a brown coal or *lignite* stage. In the Rocky Mountain region there are extensive beds of coal of Cretaceous and Tertiary times.

The United States, with 550 million tons, is now the largest coal producer of the world, followed by Great Britain, with 248 million tons, and Germany with 250 millions.<sup>1</sup>

China, with 250,000 square miles, is said to possess the greatest coal area in the world; the United States, with 200,000 square miles of coal area, come second; Canada, with 65,000 square miles, third; while India, New South Wales, Russia, and the United Kingdom follow in the order named.

**Copper.**—Copper occurs native, in strings, grains, plates, and masses, the last being sometimes of very large size. A specimen is recorded which weighed 420 tons. It is a soft but heavy metal, with a specific gravity of 8·8, and may generally be recognised by its distinctive copper colour. It possesses in an extreme degree the properties of malleability and ductility, and is an excellent conductor of both heat and electricity.

Alloyed with zinc, copper makes *brass*; and with from ten to twenty per cent. of tin, *bronze*, *gun-metal*, and *bell-metal*. Statuary bronze is a triple compound of copper, tin, and zinc.

A large proportion of the world's copper is obtained from the natural metal, with which a workable quantity of gold and

<sup>1</sup> These figures are based upon the corrected returns for the year 1918, though the latest figures available for Germany are those of 1913.

silver is frequently associated; but various ores, such as *Cuprite*,<sup>1</sup> the oxide of copper, *Bornite* and *Chalcopyrite*,<sup>2</sup> the sulphides of copper and iron, contribute largely to the general supply.

The leading copper-producing countries are the United States—Michigan, Arizona, and Montana,—Mexico, the Iberian Peninsula, Australasia and Japan, followed by Chile, Germany and South Africa.

The quantity of copper mined in the United Kingdom is now very small; 900 tons of ore per annum. Cornwall, Devon, Merioneth and Anglesey combine to produce this small supply. The chief supply of copper imported into this country is obtained from Spain, the United States, Japan, Chili and Bolivia.

One of the principal uses to which copper is put in the present day is the making of wire for the conduction of electricity.

One of the more familiar ores of copper is the "brassy" sulphide of copper and iron, known as *copper pyrites*, or *Chalcopyrite*, which bears a certain resemblance to gold, and is sometimes mistaken for it, whence the name "fool's gold." It can, however, be readily distinguished from gold by its brittleness, powdering up under the hammer, or even under the well-pressed knife-blade. It is also soluble in nitric acid; whereas gold is not; and, in addition, it has a low specific gravity, about four. From the second form of fool's gold, iron pyrites,<sup>3</sup> it is in most cases easily distinguished by its deeper colour, and the fact that it can be cut by a knife, whereas iron pyrites cannot.

A highly prized ore of copper, much used for decorative purposes, is the green carbonate, or *Malachite*,<sup>4</sup> the finest specimens of which come from Siberia. The blue carbonate of copper is the beautiful mineral known as *Azurite*.<sup>5</sup>

**Diamonds.**—The distinctive qualities of diamonds, such as brilliancy, extreme hardness, infusibility, and insolubility are well known. When highly heated, diamonds slowly

<sup>1</sup>	See Common Minerals, Plate J, No.	6.
<sup>2</sup>	" " " "	5.
<sup>3</sup>	" " " "	11.
<sup>4</sup>	" " " "	7.
<sup>5</sup>	" " " "	12.

consume and disappear as carbon dioxide, showing that their composition is pure carbon. The most highly prized varieties are colourless and as clear as water, hence "of the first water"; but diamonds are not uncommon in pale shades of yellow, green, pink and blue. Many of the impure dark diamonds, known as *carbonado*, and the fragments that are not large enough for gems are used in the form of diamond powder for polishing and cutting purposes, the diamond being so hard that it can only be cut and polished with its own dust. The most important diamond-producing countries of the world are South Africa, Brazil and India. At the present time, South Africa far surpasses the combined output of the rest of the world. Several tons of diamonds have actually been obtained from the Kimberley mines, along the Vaal River, during the last quarter of a century.

**Gold.**—Gold is a widely distributed mineral, and is usually found in association with the quartz veins of mountainous and volcanic regions; or among the washings of sand, gravel, and river mud, which have been derived from the destruction of the parent rock. Its more general form is that of *native gold*, which is an alloy of about ninety per cent. of pure gold and eight or ten per cent. of silver. All native gold has silver with it; and, in the substance known as *electrum*, the quantity of the latter amounts to about twenty per cent.

Native gold is a soft, highly ductile and malleable metal, heavy in weight, its specific gravity being about 19, and free from tarnish. In the solid rock it occurs as strings, flakes and crystalloids, frequently associated with iron pyrites, and occupying cavities in the "rotten" rock which has been left by their decomposition. In the river-washes it is also found in flakes, grains, scales, and, at times, as "nuggets," of considerable size and weight.

In recent years most gold has been obtained from the Transvaal, followed by the United States (chiefly Colorado, California and S. Dakota), Australia (more than half from Western Australia), Russia, India, New Zealand and Canada. Very rich gold supplies have recently been discovered in several parts of Canada, notably in the Klondyke region of the basin of the River Yukon.

Much of the silver and copper that is mined contains gold, mechanically mixed up with the ore, a circumstance, which

makes the mining of these minerals specially profitable. A less frequent source of gold is *Galena*,<sup>1</sup> the sulphur ore of lead.

**Granite.**—Of the many useful rocks that are employed in the arts, none perhaps is more useful than granite, and there is none that equals it in beauty. It can be of almost any colour, pink and grey being the principal hues. It is a coarse grained rock consisting of at least three distinct minerals.

1. *Mica*, occurring in grey or black shining plates, which the blade of a knife can separate into thin seams.

2. *Quartz*, either greyish or bluish in colour, having a dull glassy appearance, and which cannot be scratched with a knife.

3. *Felspar*, the mineral which generally determines the colour of the granite, with its pearly lustre, can be scratched with the blade of a knife.

4. *Hornblende*, a black, or greenish black, hard mineral, sometimes replaces the mica, and also the quartz, when the rock is known as *Syenite*.

Our supplies of granite are found in Aberdeenshire, Argyll, Cumberland, Devonshire, Guernsey (syenite), Jersey (syenite), Leicestershire at Mount Sorrel (syenite), Kirkcudbright, and Westmoreland.

**Graphite.**—Graphite, or *plumbago*, is familiar to everyone in the form of the "black lead" of "lead" pencils. It is a soft iron-black or steel-grey mineral, which occurs in masses or foliated forms in the older crystalline rocks. It can easily be cut with a knife, and its specific gravity is only just above two. One of its distinctive characteristics is the streak it leaves on paper. Its light weight and greasy "feel" readily serve to distinguish this mineral from any other. Its soapy character makes it useful as a lubricant, and its resistance to great heat permits it to be used, with clay, in the manufacture of crucibles.

Most of the commercial graphite is now obtained from Ceylon. The output from Siberia is now very small on account of the inaccessibility of the region. It is extensively mined in Ticonderoga, on the Hudson River, in the United States, and large deposits have been reported from various parts of Canada and Newfoundland.

<sup>1</sup> See Common Minerals, Plate II, No. 1.

**Grindstones.**—Grindstones are obtained from the mill-stone grits of the coal measures.

**Gypsum.**—Gypsum can be recognised very readily among rocks, as, owing to its moderate hardness, it can easily be scratched by the finger-nail.

**Alabaster** is a common form of gypsum which is extensively used in the arts, as it can be fashioned by almost any cutting tool. In its composition, gypsum is a hydrous sulphate of lime, which, on being heated, parts with its water and falls down in powder, the well-known *plaster of Paris*. This substance on being again united with water in proper proportions, sets hard and forms the substance we see in plaster casts. Our supplies of this mineral are derived from quarries in Nottinghamshire, Derbyshire, Staffordshire, Cumberland and Sussex, but France furnishes more than all these together.

**Hones.**—Hones are chiefly slates of very close texture. *Turkey oil-stones*, said to be the best, are obtained from the inland districts of Asia Minor. Hones of fine quality are also procured from Ayrshire, in Scotland; near Snowdon, in Wales; and near Tavistock, in Devonshire. Bohemia, Styria, Arkansas, and Peru also yield supplies.

**Iron.**—To man, iron is the most important of minerals. There is hardly a region of any extent on the face of the earth where it does not occur in one form or another, and there are some regions which yield it in vast quantities.

Iron occurs native almost exclusively in meteorites, where it is usually associated with nickel, and in certain volcanic rocks, such as the basalts of Greenland, in which it is scattered about in grains and nodules.

The iron of commerce is obtained exclusively from ores of the metal; and, in by far the greater quantity, from the oxides of iron. The world's greatest annual production of iron ore was in 1907, after which there was a decrease in most of the more important countries. The amounts according to the latest figures available are:—

1. United States	39	million tons of metal
2. Germany	19½	„ „ „
3. United Kingdom	4½	„ „ „
4. France	4½	„ „ „

The most important ore of iron is the red oxide, known



THE JAPANESE YEN



THE INDIAN RUPEE.

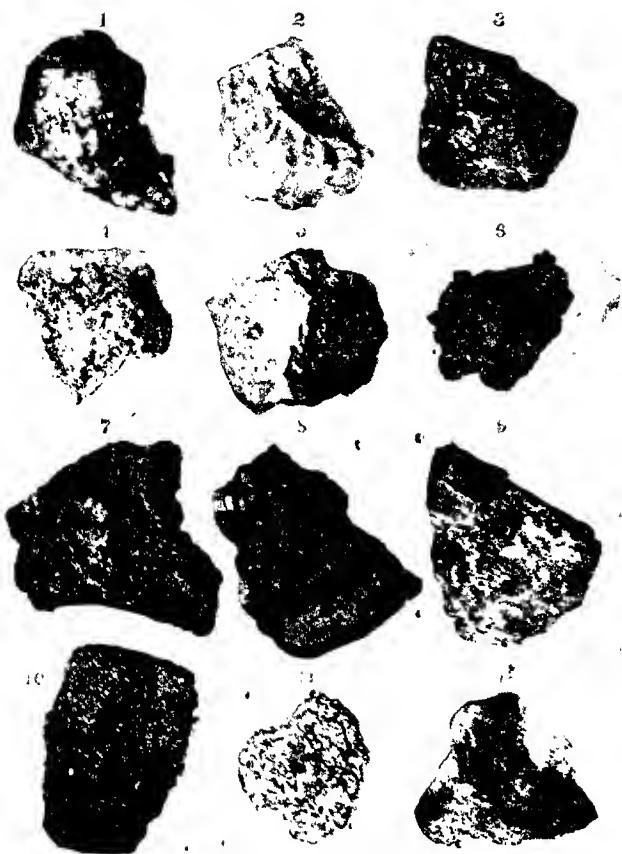


THE GERMAN MARK.

# MODERN COINS

*Actual Size.*





1. Crocidolite. 2. Beauverite. 3. Stilbite. 4. Realgar. 5. Chalcopyrite. 6. Cuprite.  
7. Malachite. 8. Hematite. 9. Limonite. 10. Magnetite. 11. Iron Pyrites. 12. Azurite.



1 Galena    2 Pyrolusite    3 Manganite    4 Garnierite    5 Ormialur    6 Cassiterite  
 7 Sphalerite    8 Zincite    9 Calamine    10. Smithsonite    11 Native Copper    12 Mispickel



UNITED STATES DOLLAR



FRENCH TEN CENTIMES.



SWISS FIVE CENTIMES

MODERN COINS.

as *Hematite*,<sup>1</sup> which occurs in a variety of forms. It has a brownish-black, reddish, or black colour; but its powder, or the streak which is put upon it by the scratch of a knife blade, is invariably blood-red; hence the name, *Hematite* or blood-stone. • Its hardness is such that it can just be scratched by the blade of a knife, but, on the firmer polished forms, no cut is possible. Its specific gravity is slightly over five.

Some of the blacker forms of hematite possess an exceedingly high polish, reflecting light, as if from a mirror or speculum; hence the name *specular iron*.

In other specimens, the lustrous parts are exceedingly minute and scaly, and barely distinguishable from the mineral mica—*micaceous iron*. One of the earthy forms of hematite is the pigment *red ochre*.

Considerably less important than hematite, but yet very important in itself, is the yellow oxide of iron or *Limonite*.<sup>2</sup> In some of its forms it has much the appearance of Hematite; but it can generally be distinguished by its brown colour, yellow streak, and yellow powder. It is largely a bog deposit, hence the name "bog-iron ore," and is frequently, even as an ore for manufacturing purposes, in a crumbly, earthy condition. *Brown* and *yellow ochre* pigments are manufactured from limonite.

A third oxide of iron is *Magnetite*,<sup>3</sup> which, as the name suggests, has the quality of being attracted by a magnet. One variety, known as *lodestone*, is a true magnet in itself. This important ore of iron occurs in large, one might almost say, mountain masses. A frequent, but less serviceable form, is that of octahedral crystals, of both large and small size, dispersed through other rocks. A mineral much resembling magnetite, but with much feeble magnetic qualities, and having both zinc and manganese in its composition in addition to iron, is *Franklinite*.

The ore known as "spathic iron" is obtained from the carbonate of that metal, forming the mineral *Siderite*. It occurs in yellowish-brown rhombohedral crystals, having a specific gravity of less than four. Yellow and green chrome pigments are obtained from *Chromite*, or chromic iron.

<sup>1</sup> See Common Minerals, Plate I, No. 8.

<sup>2</sup> " " " " " 9.

<sup>3</sup> " " " " " 10.

One of the most familiar of all iron ores, but of no service for the extraction of the metal itself, is the sulphur ore, or *iron pyrites*.<sup>1</sup> The beautiful and highly lustrous crystals of this mineral are likely to occur in almost any kind of rock. The crystals are cubes or modifications of the cube, of a brass-yellow colour, and usually so hard as completely to resist the impression of a knife. This fact should readily distinguish it from gold, with which it is frequently confounded by over-zealous searchers after the precious metal. Its greater hardness and lighter colour also serve to distinguish it from the other form of "fool's gold," copper pyrites. Almost the only service to which pyrites is put to-day in the arts is the making of sulphur and sulphuric acid.

Another sulphur ore of iron is known as "magnetic pyrites," or *Pyrrhotite*. Its reddish or bronze colour readily serves to distinguish it from ordinary pyrites; and the frequent association of it with nickel makes it one of the valuable ores of that metal.

Jet.—"Jet is but a particular form of carbon, and there can be little doubt that it is of organic origin."<sup>2</sup>—*Ansted*.

Good specimens of jet are found in *Galicja* and other parts of Spain; at *Wittenberg*, in Saxony; in the department of *Aude*, in the South of France; in England, near *Whitby*; in the *Farøe* Islands; in the Isle of *Skye*; and in the coal of *Massachusetts*.<sup>3</sup>

Lead.—One of the most familiar and useful of metals is lead, and it is so rarely found pure in nature that it might almost be said not to exist.

The commonest lead ore is a compound with sulphur known as *Galena*,<sup>4</sup> which is almost always associated with zinc blende, the sulphur ore of zinc, and hence the united mass is often spoken of as lead-zinc ore. At times, it is largely silver-bearing or argentiferous; and this fact makes the mining of the ore profitable, when possibly by itself the baser metal would not have yielded a return. *Galena* is well known in its beautiful and very common form of cubical crystals. Lead is readily cut with a knife, being one of the

<sup>1</sup> See Common Minerals, Plate I, No. 11.

<sup>2</sup> No jet has been obtained in this country since 1897, when the whole output was valued at £8.

<sup>4</sup> See Common Minerals, Plate II, No. 1.

softest of metals, and it leaves a dark streak upon paper. Its specific gravity is about eleven and a third.

The various uses to which lead is put need hardly be recounted. As an alloy with tin it makes *pewter* and common *solder*; with antimony the substance out of which printers' type is manufactured—*type-metal*. In the making of gun-shot and rifle-bullets, a small quantity of arsenic is added, which renders the lead somewhat harder, and, in addition, permits it to assume the spherical form, when dropped through the air. *Carbonate of lead* furnishes the common white lead of painters.

The largest lead producing country of the world appears to be the United States, followed closely by Spain and Germany, and then by Australia, Mexico, and Great Britain.

There are a number of ores of lead which are highly prized for their beautiful colours; such are the grass-green phosphate known as *Pyromorphite*, the orange-red chromate, called *Crocoite*; and the deep red vanadate which mineralogists call *Vanadinite*.

**Limestones.**—Limestones are all or nearly all of organic origin, being principally made up of the hard parts of various corals and other creatures which lived at about the time the rock was being formed.

In some limestones the organic remains are almost wholly of corals; such are *coral limestones*. There are many limestones, too, which are crammed full of the parts of a class of animals distantly related to starfishes, which are known as stone-lilies or crinoids. Limestones made up of these parts are *crinoidal limestones*. There are yet other limestones made up of the remains of foraminifera; and these are *foraminiferal limestones*, such as the *Nummulitic Limestone* of the Alps and Himalayas, and that of which the Pyramids of Egypt are built.

**Manganese.**—As a metal, in its associations, and in its general chemical behaviour, manganese is very much like iron. It does not occur free in nature, but is obtained principally from its two oxygen compounds, *Pyrolusite*<sup>1</sup> and *Manganite*,<sup>2</sup> more commonly the former. It is largely associated with iron, less frequently with zinc and silver; and, in one form or other, occurs in nearly all rocks. The presence of manganese

<sup>1</sup> See Common Minerals, Plate II, No. 2.

<sup>2</sup> " " " " " 3.

may be detected by its deep brown or brownish-black stain. The chief use of manganese in the arts is alloying it with iron to make steel. Pyrolusite is used extensively to colour glass and pottery, producing various shades of violet, purple, brown, and black. Russia is the largest producer of manganese, while some is also obtained from Brazil and India.

**Mercury.**—Mercury, a remarkable and exceedingly useful metal, is known to nearly everybody in its liquid form of quicksilver, the substance which fills the tubes of most thermometers and barometers. It is the only mineral, except ice, which remains liquid at ordinary temperatures; but, while ice melts at 32° Fahrenheit, mercury remains liquid until the very low temperature of 40° below zero is reached.

Native mercury is a rare metal, and when it does occur it is generally in the form of minute globules scattered through the rocks. Nearly all the world's mercury is obtained from the sulphur ore of that metal, the red mineral known as *Cinnabar*.<sup>1</sup> This mineral can easily be recognised by its red colour, its scarlet streak where scratched, its great weight, and marked softness, being easily cut with a knife. Its weight, which exceeds that of metallic iron, is far below that of the pure metal, which has a specific gravity of 13.6.

Mercury forms amalgams with gold, silver, zinc, tin, and other metals. The "silvering" on the backs of mirrors is an amalgam of mercury and tin. The "amalgamation process" of extracting gold and silver from rocks containing them consists in washing and agitating the powdered rock with mercury, and subsequently driving the mercury off by heat.

Mercury is mined at Almaden, in Spain; at Idria, in the Yugo-Slav State of Carniola; at New Almaden and New Idria, in California; in Italy; and in Russia.

**Mica.**—The transparent or semi-transparent mineral, mica, is chiefly found in Bengal.

The United Kingdom, Germany, and the United States are the chief buyers of mica, which is used

1. in the manufacture of dynamos;
2. for covering the peep-holes of furnaces;
3. for boiler packing.

**Nickel.**—Nickel is known to most people in the form of

<sup>1</sup> See Common Minerals, Plate IV, No. 5.

*nickel plate*, a coating given to steel, which resists tarnishing. *German silver* is a compound of copper, zinc, and nickel. Most of the nickel of commerce is obtained from nickel-bearing magnetic and copper pyrites, and from a silicate of magnesia and nickel, known as *Garnierite*.<sup>1</sup> The latter forms the chief source of supply in the mining districts of New Caledonia.

Nickel is almost always associated as an alloy with the iron of meteorites. Besides its use for coinage in America, Germany and other countries, a new industry in which this metal has lately been employed is the manufacture of nickel-steel, an alloy of steel with about four per cent. of nickel, used in making armour-plating for war vessels. Germany was at one time the largest producer of nickel, but now the lead is taken by Canada, where the largest known deposits occur in the Sudbury district.

**Oil Wells.**—The oil wells of North America are true artesian wells, which occur in Mexico, and in the States of Illinois, Indiana, Kentucky, New York, Ohio, Tennessee, California, Texas, W. Virginia, Pennsylvania, and Kansas. There are also oil wells in Galicia in Europe, and around Baku on the Caspian.

**Oölite.**—The substance of oölitic rocks consists principally of carbonate of lime, sometimes crystallized, sometimes granular and usually abounding in organic remains, as shells, etc. It consists of two parts, one of which forms the matrix, is mostly colourless, often crystalline, and exhibits a number of rounded or oval cavities, each of which contains a nodule or mass of a corresponding form. These nodules give the stone somewhat the appearance of the roe of a fish, hence oölite is sometimes called roe-stone. The nodules possess a granular rather than a crystalline structure. Some kinds of oölite contain grains of sand imbedded in the matrix between the nodules. The building-stones of Bath, Bristol, Portland, and Keaton (Rutlandshire) are oölitic.

**Petroleum.**—Petroleum and natural gas are products, seemingly, of some kind of natural distillation of organic remains. Most frequently the remains are exclusively vegetable; at other times they are animal and vegetable remains intermixed; and less frequently they are solely animal remains.

The source of both petroleum and natural gas is found

<sup>1</sup> See Common Minerals, Plate II, No. 4.



mainly in older rocks, especially of the coal age. Sandstones, shales, and clays are often highly charged with these products. The United States—California, Ohio and Texas,—Mexico, and Russia furnish the greater portion (90 %) of the world's supply of petroleum.

**Platinum.**—Platinum is usually classed with gold among the nobler metals. It owes its great value to the facts that it is not attacked by ordinary acids, and that it requires an enormous heat to melt it. It is usually found in an impure state as flakes and nuggets in gold bearing rocks, and most of it comes from the Ural Mountains of Russia, chiefly from S. Verkhoturski and Perm. A special use of this metal is for the wires of incandescent electric lamps.

**Rock Salt.**—Rock salt occurs in extensive beds in many parts of the world, and is the source of much of the salt used in commerce and manufactures. It is one of the few minerals that readily dissolve in ordinary water, and it imparts to it a distinct taste. Rock salt has generally a vitreous lustre, and may be white, yellow, red, blue, or even black in colour, according to the foreign material mixed with it.

The immense deposits of rock salt from which the enormous amount of salt used in the United Kingdom for manufacturing and other purposes comes, are met with in *Worcestershire*, *Shropshire*, *Staffordshire*, *Lancashire*, and *Cheshire*, and also in *County Antrim, Ireland*. The salt is obtained by mining, as at Nantwich, in Cheshire; or from brine-springs, as at Droitwich, near Worcester, at Nantwich and Middlewich, in Cheshire, and at Weston, in Staffordshire. Brine-springs are worked in Cheshire, Lancashire, Staffordshire, Durham, Worcestershire, and Yorkshire. The United Kingdom, which is the second largest producer after the United States, exports great quantities to the British East Indies.

Among the most remarkable of the salt mines in Europe are those of *Altemonta*, in Calabria; *Halle*, in the Tyrol; *Cardona*, in the Pyrenees; and *Wieliczka*, in Austria.

**Sandstones.**—Sandstone, one of the commonest of rocks, is built up of innumerable particles or grains of sand compacted into a hard rock.

The particles of sand were formed into hard rock by compression and chemical union with iron rust or lime for the cement. Sandstones may be *fine grained*, more or less adapted

for building purposes; they may be *flag-stones*, such as are used for paving and for coarse roofing; they may be *grits*, when coarse grained, as the mill-stone grits of the coal-measures; or they may be coarse *conglomerates*, or pudding stones, which are rarely available for any useful purposes.

Some of the best known sandstones of Great Britain are *Craigleith stone*, from near Edinburgh; *Darley Dale stone*, from near Matlock, in Derbyshire; *Heddon and Kenton stones*, from near Newcastle-on-Tyne; and the *Mansfield stone*, from Nottinghamshire.

**Silver.**—Silver occurs in a much greater variety of forms than gold, since it easily unites with sulphur, chlorine, and other mineralisers to form a number of distinct ores. As *native silver*, which is not common except as an alloy of gold, it occurs in long stringy masses, and also in flakes, scales, and crystals. Like gold, silver is mainly associated with crystalline rocks, occurring in veins, lodes, and pockets.

Silver is a soft, highly ductile and malleable metal, with a specific gravity of about 10.6. Its normal colour is white, but it readily tarnishes, and the presence of only minute traces of sulphur gas in the atmosphere causes it to enter into combination and turn black.

The greater part of the world's silver is not obtained from the native metal, but from one of its several ores, more commonly the black sulphur ore, *Argentite*. Two forms of red sulphur silver are known as *Pyrargyrite* and *Proustite*. An exceedingly soft compound of silver is the natural chloride or horn silver, *Cerargyrite*, which can be cut with a knife almost as easily as resin. Apart from these sources of supply, an important repository of silver is found in Galena, the sulphur ore of lead, which in many regions is highly argentiferous.

The most important *silver producing countries* are Mexico, the United States (Colorado, Montana, Utah), Australia, Canada, Bolivia and Germany. Most of the British supply comes from Mexico, Australia, Peru, Chile, and the United States.

**Slates and Shales.**—Rocks, thousands of feet in thickness, that appear in our quarries and on mountain sides, are merely compacted mud; the sea bottoms or sea fronts of ancient times.

Such are most varieties of grey and blue roofing slates, and black and green writing slates. Some of these rocks are

known to geologists as *shales*, because they shale off in slabs of regular and not very great thickness. It is to the thinner plates that the name of slate is given.

Our domestic supplies of slate are chiefly derived from Blaenau Festiniog in Merionethshire; and from the Penrhyn and other mines in Carnarvonshire. Other supplies are obtained from Lancashire, Cornwall, and Argyll. Slate is also mined in Pennsylvania (U.S.A.) and the Ardennes.

**Sulphur.**—Sulphur is in many ways a most important mineral; for its combinations with silver, lead, zinc, and antimony form their sulphides, some of the most important ores of these metals. In its native condition it is a beautiful yellow mineral, occurring either massive or in crystals. It is easily cut with a knife, and it freely burns when heated, with a pale blue flame, forming the suffocating sulphur gas.

Most of the sulphur of commerce is found in volcanic regions—Sicily, the Lipari Isles, and other similar places. The sulphur required for the manufacture of oil of vitriol is mostly obtained from iron pyrites, the largest producers of which are Portugal, France and the United States.

**Tin.**—If tin occurs at all in the native metallic state, it does so very rarely. Its most common ore is the oxide, when it forms the mineral *Cassiterite*,<sup>1</sup> or tin-stone, a rich brown, hard substance, distinguished in its crystalline form by a beautiful lustre and a specific gravity of about seven. It occurs in certain granite rocks; but elsewhere it is found in rolled grains and pebbles, the so-called "stream tin," and in fibrous masses, "wood tin."

In the arts, tin is extensively used as a coating for iron, forming the well-known tin-plate. With copper, in various proportions, it constitutes the forms of bronze known as bronze proper, gun-metal, bell-metal, and some others. In combination with lead it makes pewter; and with antimony, Britannia metal.

The tin mines of Cornwall, in England, and those of Saxony and Bohemia have been worked for centuries, but by far the greatest quantity now comes from the East Indies (the Straits Settlements, Banca and Billiton), after which come Bolivia and Australia, where Tasmania and Queensland are the greatest producers.

<sup>1</sup> See Common Minerals, Plate II, No. 6.



THE TOBACCO  
PLANT.



THE COFFEE PLANT.





I. Cloves. II. Cinnamon. III. Pepper. IV. Vanilla.



I. Cotton. II. Flax. III. Silkworm Moth. IV. Eggs of Silkworm Moth.  
V. Part of Silkworm. VI. Silkworm



THE CINNAMON TREE



THE RUBBER TREE.

**Zinc.**—As a pure metal, zinc is not known to occur in a state of nature. That which is used in the arts is extracted from one or more of the zinc ores, most largely from zinc sulphide, the mineral *Sphalerite*,<sup>1</sup> or zinc blende. This mineral is usually found in irregular or partially crystallised masses of a transparent grey or yellow hue, with a distinct resinous lustre. There is a remarkable association between this ore and Galena, the two being so generally found together in the same deposits, that they are frequently spoken of as lead-zinc ores. Other but much less common ores which yield this very useful metal are the red oxide, known as *Zincite*,<sup>2</sup> and the silicate, *Calamine*.<sup>3</sup> The crude metal, much of which is imported into the United Kingdom, is called spelter. The richest yields of zinc are obtained from the United States, Germany, the United Kingdom, France and Belgium.

Among the more important uses to which zinc is put is the manufacture of zinc-white, the oxide of the metal, a substitute for the lead-white of painters. Alloyed with copper it makes brass; and, in a different proportion, the so-called "white metal." The coating of iron with zinc constitutes the process of galvanising.

<sup>1</sup> See Common Minerals, Plate II, No. 7.

<sup>2</sup> " " " " " 8.

<sup>3</sup> " " " " " 9.



## CHAPTER IV.

### COMMON PLANTS AND THEIR COMMERCIAL PRODUCTS.

**Acacia.**—There are many trees of tropical and sub-tropical countries which contain a larger proportion of *tannin* than that yielded by oak-bark. One of these is a kind of *Acacia* which grows in the mountainous parts of Hindustan and the East India islands, and yields the substance known as black *Catechu*, or Japanese earth. In Australia many of the acacias, or *wattles* as they are called, yield tannin, and also a valuable gum almost equal to gum arabic.

**Apple (*Pyrus Malus*).**—Numerous varieties of this useful fruit, produced by care and cultivation, are now grown. The apple is a hardy tree, flourishing nearly as far north as latitude 62°; thriving best, however, in temperate climates. The wood is highly valued, for its close grain and great hardness, by turners, cabinet makers, and wheelwrights; but from a commercial point of view, it is the fruit that has to be considered.

The London market is supplied with apples from Canada, the United States, Tasmania, Australia, and New Zealand.

**Araucaria.**—The araucarias are a handsome genus of ever-green cone-bearing trees, to which belong the *Norfolk Island Pine* and the *Brazilian Monkey Puzzle*; but the most valuable timber tree of this genus is the *Bunya Bunya* of Queensland.

**Arrowroot.**—Arrowroot is a name given to various kinds of starch.

1. *West Indian Arrowroot* is obtained from the tubers of three species of *Maranta*, very like the plants from which ginger is derived.

2. *East Indian Arrowroot* is the starch from the tubers of *Curcuma*, a kind of ginger, and is sometimes called Curcuma starch. It comes from Singapore.

3. *Tahitian Arrowroot* comes from a species of *Tacca*; and the substance called

4. *Portland Arrowroot* is extracted from the root of the

common Cuckoopint, the plant which children call Lords and Ladies (*Arum maculatum*).

**Ash** (*Fraxinus*).—The ash is a deciduous tree, with very tough, elastic wood, much used for hoops, oars, coach-building, tool-handles, and agricultural implements. It is a native of Europe, Asia, and Africa. The *Manna Ash* yields the manna sold by druggists.

**Bamboo** (*Bambusa*).—Bamboos are gigantic grasses which thrive in the tropics. In their multifarious uses, they supply to the people of the countries in which they grow the place of the cocoa-nut with the South Sea Islanders, and the date palm with the Arabs. Furniture, ornamental articles, and even cycles are now made of bamboo. Large quantities of this plant are imported for manufacturing purposes.

**Battens**.—Battens are pieces of fir wood, from fourteen to sixteen feet long, and not more than seven inches wide or two and three-quarter inches thick. The best battens come from Christiania, in Norway; and an inferior kind is imported from America.

**Box tree** (*Buxus sempervirens*).—The wood of the box tree is hard, heavy, and close-grained; and these characteristics, combined with its light colour, cause it to be esteemed by engravers beyond all other woods; but it is both scarce and expensive. Our supplies come chiefly from the Caucasus, Turkey in Europe and Asia, and northern Africa.

**Camphor**.—Camphor, so much used in medicine and in the composition of varnishes, is the resin of a kind of laurel, *Laurus camphora*, which grows in China, Japan, and Formosa. In Formosa, the Japanese have made the culture and sale of this important commercial product a government monopoly.

**Cassava**.—Cassava is the coarser part of the starch derived from the tuberous root of *Jatropha manihot*, a Brazilian plant of the Spurge family; tapioca being the finer kind. Our supplies of tapioca come from the West Indies and Singapore.

**Cedar**.—The cedar of Lebanon is a kind of pine; but the fragrant wood of which cigar boxes are made and in which the graphite of pencils is enclosed is the timber of the Virginian Juniper commonly known in America as red cedar, *Juniperus Virginiana*.

**Cereals**.—The principal cereals, considered from a commercial point of view, are barley, maize, oats, rice, and wheat.

*Barley*<sup>1</sup> (*Hordeum sativum*) is the grain which can be cultivated over a wider geographical range than any other cereal, reaching its greatest perfection, however, in the temperate zone. After wheat, it is the prevailing grain crop of the United Kingdom, which also imports further supplies from the United States and India.

*Maize*<sup>2</sup> (*Zea Mays*), or Indian Corn, a native of America, is now cultivated for its useful grain in most warm countries. A tall, stout-growing plant, it rather resembles a cane than a grass, and reaches a height of over six feet, the stalks being surmounted by thick heads or cobs of grain, enclosed in sheaths. Our supplies are drawn from the Argentine Republic, the United States and Canada.

*Oats*<sup>3</sup> (*Avena sativa*). There are numerous varieties of oats, such as the white, black, and potato oat; and this cereal thrives best in cool, moist climates, and in elevated regions. The largest quantities are grown in Russia, Canada, Scandinavia, Denmark, Scotland, Ireland, and New Zealand.

*Rice* (*Oryza sativa*), which needs great heat and irrigation, is largely cultivated in the tropics. It is the staple food of the teeming millions who dwell in and around the enormous deltas and low alluvial plains of Burma, Hindustan, China, Japan, and Java. The swamps of Carolina, the low ground along the Mississippi in Louisiana, and the plain of Lombardy are other noted districts where rice is grown. Large quantities of this cereal are imported into this country, but much of it is again exported.

*Wheat*<sup>4</sup> (*Triticum vulgare*) is probably the most valuable of all the cereals. It is cultivated now in hundreds of varieties; and almost every year new ones appear. They are produced by a very careful selection of seeds from plants that show a tendency to vary in the direction desired, and these are cultivated separately until the desired result is obtained.

The wheat crop of the United Kingdom, which is about ninety millions of bushels annually, was in 1914 less than one-fourth of the quantity consumed; and over 100 millions of cwts. had to be imported every year from the United States,

<sup>1</sup> See Coloured Plate, Cereals, III; <sup>2</sup> See Coloured Plate, Cereals, V; <sup>3</sup> See Coloured Plate, Cereals, IV; <sup>4</sup> See Coloured Plate, Cereals, I and II.

Russia, Rumania, the Argentine Republic, the Dominion of Canada, British India, and Australasia. Between 1914 and 1919 the amount of wheat produced in the British Isles was increased by thirty million bushels per annum.

**Cheesewood** (*Pittosporum bicolor*).—The timber commercially known as cheesewood grows in the woods of Victoria and Tasmania.

**Cinnamon** (*Cinnamomum Zeylanicum*).—Cinnamon consists of the inner bark of a kind of laurel, a native of India and Ceylon, for which Cassia, a coarser and less aromatic bark of another laurel, the bulk of which comes from China, is frequently substituted.

**Cocoa-nut fibre, or Coir.**—The fibre from the cocoa-nut, also called coir, is now applied most successfully to the manufacture of mats, matting, cordage, brushes, brooms, and many other articles. From the albumen of the seed an oil, known as cocoa-nut butter, is obtained, and is much used in the manufacture of soap and candles. The cocoa-nut palm (*Cocos nucifera*) grows luxuriantly in India and Ceylon, and in most tropical countries, especially near the sea.

**Cork.**—Cork is the outer bark of the Cork Oak (*Quercus suber*), which is cultivated in Spain, Portugal and France, from which countries we obtain our supplies.

**Deals.**—Deals are planks made of fir-wood, more than six feet long and more than seven inches wide. They are generally three inches thick; and when sawn thinner are called boards. Most of the deals imported to this country come from Sweden, Norway, Russia, and North America. Those from northern Europe, called Baltic timber, are of the best quality.

**Drugs.**—The principal drugs of commercial importance will be mentioned in this paragraph.

The extract of the juice of the **aloe**, which is cultivated in the Cape of Good Hope, the East and West Indies, and Barbadoes, is used in medicine as a purgative.

The highly disagreeable-smelling gum resins, **Assafoetida** and **Galbanum**, which are procured from Persia, the East Indies, and Tibet, are remedies of great value in hysterical complaints. They are yielded by umbellate plants closely related to the poisonous hemlock, dropwort and fool's parsley of our hedges and waste lands.

The **Castor Oil Plant** (*Ricinus communis*) is a member of

the spurge family. It is widely cultivated, but India produces most of the world's supply. The oil of its seeds is one of the mildest purgatives known, although that of the seed-coats is very acrid and dangerous.

The seeds of the Croton Plant (*Croton tiglium*), another handsome plant of the same family, which grows in Malabar and Tenasserim, also furnish an acrid oil, which is used in medicine as an active purgative and emetic.

Gentian, the product of a plant of the same name, which covers the sides of some of the hills in southern Europe and Asia, is much valued in medicine as a tonic. This is owing to a very bitter principle which exists in the leaves, flowers, bark, and roots.

The wood of the Lignum vitæ tree (*Guaiaicum officinale*) of the West Indies and tropical South America yields the resinous bitter principle known in medicine as *Guaiaicum*.

The *Ipecacuanha* of commerce is yielded by the root of a plant belonging to the violet family which grows in South America.

The *Convolvulus* family yields two important drugs, Jalap and Scammony.

Scammony is the resinous milky juice obtained from *Convolvulus Scammonia*, a species which grows in the countries bordering on the Levant, and which hardens when exposed to the air.

The drug known as Jalap is the powdered root of a Mexican species (*Ipomœa purga*), which, when administered in proper doses, is as safe as well as an active medicine. It is also a very cheap one, and a very large quantity is accordingly consumed in this country, being chiefly imported from Vera Cruz.

The fatal drug, Nux. Vomica, from which the powerful poison *strychnine* is obtained, consists of the seeds of an East Indian plant which is also found in northern Australia.

Opium is contained, in small amount, in the milky juices of many plants, but especially in the poppy order. The species which yields it most abundantly is the white poppy (*Papaver somniferum*), when grown in a hot climate. More opium is prepared in Hindustan than in any other country, the annual export of this article being valued at about seven millions sterling.

The Peruvian Bark family of plants furnishes some of the

most valuable drugs, among which are *cinchona* and *quinine*. The bark of these trees contains a large quantity of quinine, which is a cure for ague and extremely valuable as a tonic. It is from trees growing in elevated situations that the best bark is obtained. The cinchonas, of which several kinds afford the drug, grow naturally in the dense forests of the tropical Andes, and are cultivated in the crown colony of Ceylon. The largest supplies come from Java.

*Sarsaparilla* is yielded by the root-stocks of lily-like plants (*Smilax*), which grow in the West Indies and tropical America and are cultivated in India, China, and Australia.

*Senna* and *liquorice* are yielded by two bean-like plants; the former substance being derived from the leaves of several kinds of *Cassia* which grow in Egypt and Arabia, the latter, from the roots of a plant cultivated in the south of Europe.

**Dyes.**—The colouring matter of rapidly-growing parts is seldom sufficiently permanent, when removed from the plant, to render it valuable for dyeing textile fabrics; and the substances used for these purposes are chiefly obtained from the heartwood, roots, or bark; sometimes, however, dyes are obtained from leaves or fruits.

Of all the blue dyes, *Indigo* is the most important. It is obtained from the juices of several species of the genus *Indigofera*, herbaceous plants of the pea and bean order which grow in almost all parts of the torrid zone. The indigo, which pervades the leaves and other green parts of the plants, is usually extracted by fermentation. An increasing quantity is now made chemically in Germany and the importance of the natural product is declining.

Nearly all the indigo imported into the United Kingdom is produced in the East Indies; and much of it is re-exported.

A violet hue is easily given to cloth by mixing blue and red dyes in any required proportion; but there are some plants which yield a violet or purple dye without any admixture. The chief of these is *Logwood*, the produce of *Hæmatoxylon Campechianum*, a tree of the pea and bean order growing in the bays of Campeachy, and Honduras, but imported mostly from British Honduras and Jamaica. The peculiar colouring matter which is yielded by the heartwood is called *hematin*. The deep violet or purple dye of the fluid formed when chips of logwood are boiled in water

can be changed to black by proper treatment; hence the chief use of this substance is in dyeing black and producing all shades of grey.

The principal red dye obtained from the vegetable kingdom is Madder, the produce of *Rubia tinctoria*, a plant closely allied to the common bedstraws of our hedges, which grows naturally in the Levant, and is successfully cultivated in the south of Europe. The colouring matter is obtained from the roots; now, however, most madder is made artificially. Other valuable red dyes are obtained from the heart-wood of two trees known as *Brazil wood* and *Nicaragua wood*, both of which are found in Central and South America.

A very excellent yellow dye and tanning material, known as quercitron, is obtained from the bark of the black oak of America (*Quercus tinctoria*). A much greater demand, however, exists for the dye termed Fustic, which is extracted from the wood of a kind of mulberry tree (*Maclura tinctoria*), which grows in Brazil and the West Indies. Arnatto is another yellow dye, obtained from the pulp lying between the husk and the seeds of the arnatto tree (*Bixa orellana*), a native of both the East and West Indies. Turmeric is procured from the roots of an East Indian plant of the ginger order (*Curcuma longa*).

Fawn and brown dyes are obtained from the shoots of the Sumach (*Rhus coriaria*), a native of Southern Europe and Syria.

**Gambier.**—Gambier, Gambir or white catechu, is prepared from the leaves of *Uncaria Gambier*, a plant of the cinchona family, which grows in Malacca and the East Indian Archipelago. It is one of the most powerful astringents, and is largely employed in tanning and dyeing.

**Gum.**—The chief employment of gum is in calico-printing, where it is used to stiffen the cloth before the colours are applied, in order that they may not run. The kind termed *Gum Arabic*, which is the one most valued, is obtained from certain species of acacia which flourish in the hottest parts of Arabia and central Africa. *Gum Senegal* is similar to Gum Arabic, but is of an inferior quality. *Gum Tragacanth* is obtained from a low, prickly shrub belonging to the pea and bean order, which grows in the Levant. This gum is used in some kinds of calico-printing in which the chemical action of the dyes on other gums would injure their qualities.



I. Tea.    II. Coffee.    III. Sugar    IV. Hops





THE CAMPHOR TREE.  
(See page 35.)

**Gum Trees, or Eucalyptus.**—The Tasmanian Blue Gum (*Eucalyptus globulus*) is widely known, producing a hard, durable wood, in great request for ship-building and railway sleepers. The Jarrah (*E. marginata*) of West Australia, the Ironbark (*E. leucoxylon*), and Karri (*E. diversicolor*) are also famed for their splendid timber. Some of the streets of London are paved with Jarrah.

**Hops**<sup>1</sup> (*Humulus lupulus*).—Hop gardens are chiefly found in Kent, Sussex, Hereford, Surrey, Worcestershire, and Hampshire; but we do not produce sufficient hops to supply our needs, and have to import additional supplies from Europe and the United States.

**India-rubber.**—Another vegetable secretion of great commercial importance, for which new and valuable applications are constantly being discovered, is *Caoutchouc*, commonly known as India-rubber. It forms a part of the white juices of several orders of tropical plants, especially of the Bread fruit, the Oleander, the Fig, and the Spurge orders. It occurs in the form of minute globules, diffused as an emulsion in the white juices of the plants. The caoutchouc of Sumatra and Madagascar is obtained from *Urceola elastica* and *Vahea elastica* respectively, plants allied to the periwinkle of our shrubberies. That of Para, Demerara, and Surinam is furnished by species of *Siphonia*, allied to the spurges of our woods and fields. The India-rubber of some South American trees is obtained from several species of figs; and the original India-rubber of the East Indies and Japan is contained in the juice of the now well-known *Ficus elastica*. *Gutta-percha* is a similar product of the milky juice of the To tree (*Isandra Gutta*) which grows in Borneo. Some idea of the growth of the Rubber trade may be gathered from the fact that the production of 5,000 tons in 1875 has increased to 290,000 tons (valued at 60 millions sterling) in 1918. India-rubber goods and waterproofs of British manufacture are largely in demand.

This has been called an "India-rubber Age"; and for this modern necessary of life we have mainly to depend upon natives of South America, each of whom can earn three pounds a day by cutting gashes in the trunks of the rubber trees which line the swampy valleys of the Amazon and its

<sup>1</sup> See Coloured Plate, Commercial Plants, IV.

tributaries. They cut gashes in the bark, and place under the wound a little clay dish. The fluid which runs out of the bark of the tree is collected and dried over a fire of oily nuts.

**Lac-dye and Lac-resin.**—Lac is a resin which exudes from the branches of several trees of tropical climes, especially from *Ficus religiosa*, *F. indica*, and *Rhamnus jujuba*, when bored by the insect known as *Cossus ficus*. From this resin the red colouring substance called *lac-dye* is prepared, and the remainder, called seed-lac, is melted down into *shellac*.

**Macaroni.**—Until recently, the manufacture of macaroni was confined to Italy, especially *Genoa*, but it is now made in various parts of the south of France. It is made of the finest wheat.

**Mastic.**—Mastic is a resinous gum obtained from the Lentisk tree (*Pistacia Lentiscus*), which hardens into straw-coloured drops. It is imported from the Mediterranean region of Europe and Africa, and largely converted into varnish.

**Maté.**—Maté, a substitute for tea, consisting of the dried leaves of the Brazilian holly (*Ilex paraguayensis*), is extensively consumed in South America, and has recently been imported into England.

**Oak.**—The different species of oak constitute a numerous family, distributed over a wide geographical range. The northern hemisphere has a liberal share of different kinds. Other species are found in Java, the uplands of Mexico, South America, and southern Europe. In cool climates, such as that of Great Britain, the oak grows to a great size, and is highly esteemed for its valuable timber and astringent bark, the latter being used by tanners and in medicine.

The Cork Oak (*Quercus suber*), a native of southern Europe, produces the well-known cork of commerce. The Valonia Oak (*Quercus agrifolia*), is very extensively cultivated along the shores of the Mediterranean Sea. The acorn-cups of this tree produce tannin in large quantities.

Oak galls, chiefly obtained from *Quercus infectoria*, a native of the Levant, are used in the manufacture of ink. They are excrescences caused by the punctures of gall-flies.

Many of the American oaks, especially the Post Oak, White Oak, Rock-chestnut Oak, Live Oak, Shingle Oak, and Black Oak, are of commercial value either for timber or tannin, or both.

**Oils.**—The large number of oils obtained from plants may be divided into the fixed or fatty oils, from which no vapour passes off at the temperature of boiling water, and the essential oils, which give off vapour.

**Fixed Oils.**—Of the fixed oils, that in greatest request is *olive oil*, which is obtained from both the pulp of the fruit and the seeds of the Olive tree (*Olea Europea*); the former being of better quality. Originally a native of Syria, Persia, and other warm temperate countries of Western Asia, the culture of the olive has gradually spread itself over the south of Europe and the north of Africa. Commercially, the oil is largely used in the manufacture of superior kinds of soap, and for various other purposes. Italy is the largest producer, but we import most of our supplies from Spain.

**Linseed Oil**, which is obtained from the seeds of the flax plant, is of very general application in the arts, especially in oil-painting, and in the composition of varnishes, as it dries on exposure to the air. When boiled it is termed *drying oil*, and is then used for the manufacture of printers' ink, which is a kind of paint composed of oil and lamp-black.

Other vegetable oils are extracted from hemp, cotton, and poppy seeds.

The importance of these seeds commercially will be seen when we state that the United Kingdom imports oils and oil seeds valued at nearly fifty millions sterling annually from India, Egypt, Russia, the Argentine Republic, and the United States, a great proportion of which consists of flax and cotton seeds.

**Palm Oil** is obtained from the fruit of several kinds of palms which grow in West Africa, chiefly in Nigeria. The oil, which is contained in the kernel of the nut, is imported in large quantities to the United Kingdom for the use of the soapmaker and perfumer; the value of the import being about a million and a half sterling annually.

**Essential Oils.**—The essential or volatile oils are chiefly obtained from the leaves and flowers of plants; sometimes, however, they exist in the wood, bark, or seeds. One of the best known, and commercially the most important of these, is Oil of Turpentine, commonly termed *Spirit of Turpentine*, which exists in combination with resin in special receptacles in the wood of pines and firs. *Common Turpentine* is obtained

from the Scotch Fir when growing in the south of Europe and the southern parts of North America. A superior kind, yielded by the larch of southern Europe, is known in commerce as Venice turpentine.

Several other plant resins, which are commonly termed *gums*, are of commercial importance. *Copal* is obtained from a species of sumach grown in tropical Africa (Angola and Benguela). *Mastic* is a similar product from Chios, in the Grecian Archipelago. *Dragon's Blood* is a red resin which exudes in drops from the stems of several trees growing in the tropics generally.

**Oranges and Lemons.**—There are many kinds of *oranges* imported to this country from Spain, Malta, Italy, Florida, California, and even from Australia; but we are indebted for our supplies of *lemons* almost wholly to the countries bordering on the Mediterranean, chiefly Spain and Italy.

**Spices and Condiments.**—Spices are natives of tropical climates—chiefly of the East and West Indies, for none of the plants yielding them are sufficiently hardy to be grown in temperate climates.

**Allspice** is the fruit of the *pimento*, a tree of the myrtle order, cultivated in Jamaica. The spice is so called because it unites the flavour of cloves, cinnamon, and nutmegs. It is largely used in consequence of its cheapness when compared with other spices.

**Cinnamon**<sup>1</sup> is grown in Ceylon; it is also cultivated in Java, and has been introduced into the West Indies. It is the bark of a kind of laurel.

**Cloves**<sup>2</sup> are the dried, unopened flower-buds of a small tree belonging to the myrtle order, which is a native of the Moluccas or Spice Islands. The culture of cloves has been introduced into both the East and West Indies.

At one time, the trade in cloves was a monopoly of the Dutch, and so determined were they to keep it in their own hands, that they destroyed the trees in all the islands of the Moluccas except Amboyna, the seat of their government.

**Ginger** consists of the underground stem of a plant not very unlike the iris of our gardens. Originally a native of tropical Asia, it has for a long time been successfully cultivated in China, the East Indies, and the West Indies.

<sup>1</sup> See Coloured Plate, Spices, II; <sup>2</sup> See Coloured Plate, Spices, I.

Mace and Nutmegs are both produced by the same plant, a tree belonging to the laurel order. The nutmeg tree was formerly confined to the Moluccas, but it has been introduced into Java, Sumatra, Penang, and other islands of the east as well as into the West Indies.

The nutmeg is the single seed contained within a fleshy fruit, not unlike an apricot in appearance at first. As it ripens it bursts into halves, displaying the seed between them. The nutmeg is enveloped in a netted covering; this is the mace of commerce.

Mustard consists of the ground seeds of two plants known respectively as *Sinapis alba* and *nigra*, cultivated largely in the East of England.

Pepper<sup>1</sup> consists of the berries of a climbing shrub (*Piper nigrum*) largely cultivated in Malabar, Sumatra, Java, the Straits Settlements, Borneo, and the West Indies. The black pepper of commerce consists of the entire fruit. The husk is removed to make white pepper.

Vanilla<sup>2</sup> is the fragrant fleshy fruit of the tropical American climbing orchids, *Vanilla aromatica* and *planifolia*.

Spirits.—Ardent Spirits are produced when fermented liquids, such as wine or beer, are distilled. Alcohol is produced in large quantities, and small but varying proportions of volatile oil impart to each kind of spirit its peculiar flavour and odour. It is chiefly from malted and raw grains of various kinds that ardent spirits are distilled in the United Kingdom, in northern Europe generally, in the United States and the Dominion of Canada. Maize is extensively employed in the United States, and potatoes on the continent of Europe; but potato spirit is more injurious than any other.

Brandy, or Cognac, derives its vinous flavour from the juice of the grape. It is principally manufactured in the valley of the Charente, Cognac being the centre of the industry and *Tonnay-Charente* its principal port of shipment.

British imports of brandy reach the annual value of over one million sterling.

Rum obtains its odour and taste from molasses, the scorched and altered juice of the sugar cane, and our supplies are chiefly obtained from Jamaica and Demerara. The amount imported is gradually decreasing.

<sup>1</sup> See Coloured Plate, Spices, III; <sup>2</sup> See Coloured Plate, Spices, IV.

**Whisky** obtains its peculiar flavour from the grain which is used in its manufacture. It is distilled in both Scotland and Ireland.

**Starches.**—The principal food starches of commerce are Arrowroot, Sago, and Tapioca.

*West India Arrowroot* is obtained from the underground stems of *Maranta Arundinacea*, a native of the West Indies and the tropical parts of the American continent. The stem is beaten and the arrowroot washed out of it.

*East India Arrowroot* is made from the small round tubers of *Canna edulis*, the same plant that yields turmeric. It is not so silky in appearance as the West Indian, and does not feel so firm between the fingers.

**Sago.**—The soft interior of the stems of some palms is nearly or quite destitute of woody fibre, the cells being filled with starch. This is the case with the sago-palm (*Sagus farinifera*) of the East India Islands, the starch of which is washed out, rubbed through a sieve, and sent to Europe.

**Tapioca** is the starch of a deadly poisonous plant termed *Jatropha manihot*, a native of South America. By suitable treatment all dangerous qualities are removed. The juice of the root was employed by the savages to poison their arrows.

**Substances used in Paper Making.**—Some paper, as is well known, is manufactured from *cotton* and *linen rags*, so that it consists of a kind of fibrous felt; but, owing to the scarcity of rags, other substances are now used.

The most important of these are *wood pulp*, *esparto grass*, and some other *vegetable fibres*. In recent years we have imported on the average wood pulp to the value of 5 million sterling, linen and cotton rags and other paper-making materials to the value of a quarter of a million, and esparto to the value of three-quarters of a million.

One newspaper proprietor in London owns an extensive plantation of esparto grass in Algeria, while another has acquired a tract of forest in Newfoundland as large as Lancashire for the production of wood pulp.

**Rice Paper**, as it is termed, is a totally different material from ordinary paper, consisting of thin layers of the pith of a Chinese herb (*Fatsia papyrifera*), cut by a peculiar operation.

**Papyrus** was made from a kind of sedge, *Papyrus Syriacus*. The thin skin from the insides of the stems was placed in layers and pressed so as to form a compact sheet. The paper made from papyrus was inferior in every respect to that now produced, except as regards durability.

**Sugar.**—Sugar is found in the juices of a great number of plants; but the sugar of commerce is chiefly obtained from the sugar-cane, beet-root, and sugar maple.

The **Sugar-Cane**<sup>1</sup> (*Saccharum officinarum*), which is a large grass, has been cultivated by the Chinese from very remote times. It was introduced by the Saracens into Sicily and Spain; and from the latter country it was carried by the Spaniards into the West Indies, in the year 1506. A second species of sugar cane, a native of the New World, is also cultivated in the tropical portions of America. The sugar-cane is found in India, and the manufacture of sugar has been carried on there from a very early period.

In the northern United States and in the Dominion of Canada, sugar is obtained from the sweet maple (*Acer saccharinum*).

In France, Holland, Belgium, and Germany, sugar is made from beet-root, and the manufacturers received a bounty of every ton exported; as this bounty-fed sugar could be produced more cheaply than cane sugar, it nearly brought about the ruin of our West Indian colonies and British Guiana, until they were assisted by the home government in 1898. Bounties were abolished by the Convention of 1902.

The British import sugar to the value of 36½ millions sterling annually, some of which is beet-root sugar. In 1914 half of our annual supply came from Germany; another fourth from France, Holland, and Belgium; leaving the Argentine Republic, British Guiana, British West Indies, British India, Brazil, and Peru to supply the remainder.

#### Tea, Coffee, and Cocoa.

**Tea**<sup>2</sup> is manufactured from the leaves of a small evergreen shrub (*Thea Chinensis*), much like the Camellia, and belonging to the same natural order. The plant is a native of China,

<sup>1</sup> See Coloured Plate, Commercial Plants, III.

<sup>2</sup> See Coloured Plate, Commercial Plants, I.



Japan, and some parts of British India, where its culture is of great importance. It is also largely grown in Ceylon.

Until recently, the tea imported into the United Kingdom came chiefly from China; but of late years India and Ceylon teas have largely taken the place of those from China. The value of the tea we annually import is 14½ millions sterling, nine-tenths of which comes from British India and Ceylon, most of the remainder being China tea.

The latest returns available show that the proportion of tea imported from China is decreasing, while that from India is on the increase. The figures are:—British East Indies, 13½ million pounds sterling; Ceylon, nearly 5 millions; China, 1½ million. The quantity of tea grown in British Possessions is also increasing, especially in Natal.

Coffee<sup>1</sup> consists of the seeds of a pretty evergreen shrub (*Coffea Arabica*) belonging to the same order of plants that furnishes cinchona. Originally a native of Abyssinia, the coffee shrub was introduced into Arabia in the year 1454, and Brazil in 1774; it is now largely cultivated in many tropical countries, especially in Brazil, the states of Central America, the East and West Indies, and Ceylon.

The United Kingdom imports coffee to the value of about 2 millions sterling annually, chiefly from Brazil, the United States, Costa Rica, Guatemala, Colombia, Ceylon, India, Java, and Arabia.

Cocoa consists of the seeds of the cacao tree (*Theobroma Cacao*), a plant closely allied in the structure of its flowers to the hollyhocks of our gardens. It is a native of Central America, but is now extensively cultivated in the West Indies, and has been introduced into the tropical parts of Asia. Cocoa, to the value of over 9 millions sterling, is annually imported into this country from Trinidad and other West India Islands, Ceylon, St. Thomas, Ecuador, and Brazil.

Tobacco.—The tobacco of commerce is prepared from the leaves of two species of plants belonging to the same natural order as the potato, namely, common green tobacco (*Nicotiana rustica*) of Northern India, Tibet, Western China, and Syria; and Virginian tobacco (*Nicotiana tabacum*) of America and

<sup>1</sup> See Coloured Plate, Commercial Plants, IC.



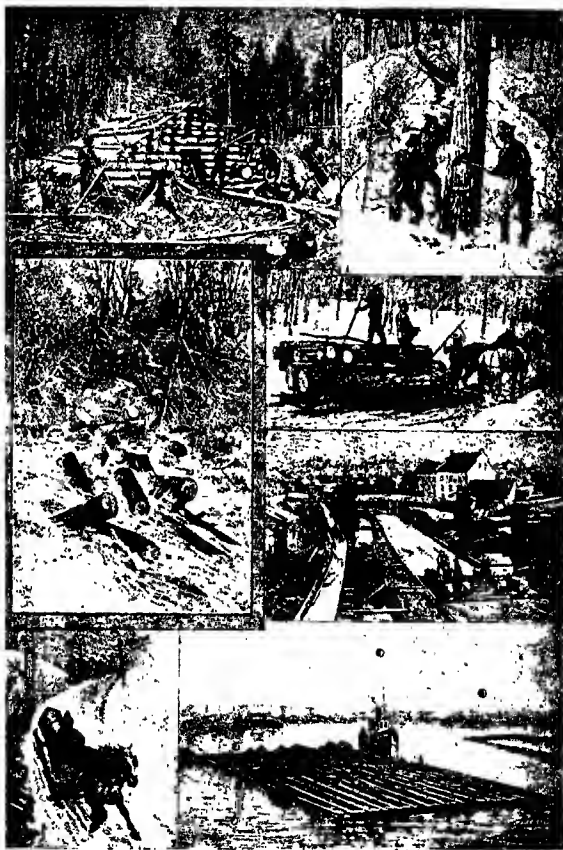
COCHINEAL INSECTS ON CACTI.  
(See page 56.)



TABLE OF COLOURS.

HEIGHTS	DEPTHS
<p>1000 ft. &amp; above 500 " " " 200 " " " 100 " " " 50 " " " 20 " " " 10 " " " 5 " " " 2 " " " 1 " " "</p>	<p>100 fms. &amp; above 50 " " " 20 " " " 10 " " " 5 " " " 2 " " " 1 " " " 1/2 " " " 1/4 " " " 1/8 " " "</p>

A  
PHYSICAL MAP  
OF  
THE BRITISH ISLES  
Scale of English Miles  
Scale of Nautical Miles



# LUMBERING IN CANADA.

1. *Felling the timber.*
2. *Lumberman's shanty.*
3. *Hauling the logs on a sledge.*
4. *Rolling logs into the river.*
5. *A timber slide at Ottawa.*
6. *Timber raft on the St. Lawrence.*
7. *A forest timber road.*

Southern India. It was used in Persia, in which country it still grows, long before the discovery of America; but it is from that continent, and from the West Indies, that most of our supplies are derived.

Some idea of the amount of money expended upon tobacco may be formed from the fact that the quantity imported annually is valued at 18 millions sterling, a large proportion of which comes from the United States.

Latakia is a mild and finely flavoured tobacco, named from a seaport of Syria, in the neighbourhood of which it is cultivated.

The tobacco imported from the southern states of America is the kind most frequently smoked in a pipe; the produce of Havana and Manila being generally converted into cigars and cheroots. Tobacco is also extensively cultivated in France, Germany, Holland, Belgium, the southern provinces of Russia, Turkey, Syria, India and Brazil.

The finest tobacco comes from Western Cuba; the produce of Manila is perhaps the next in quality; while the southern United States produce the greatest quantity.

**Vegetable Fibres.**—The raw materials of which our textile fabrics are manufactured are derived from both the vegetable and the animal kingdoms, but those from the former source only will be mentioned in this chapter.

**Cotton** consists of the fine fibres surrounding the seeds of the cotton-plant (*Gossypium*), of which there are several varieties. The cotton-plant belongs to the same natural order as the hollyhocks of our gardens. Some varieties are herbaceous annuals; others are shrubs; while one even attains the size of a small tree. In upland cotton the fibres adhere firmly to the seed; while in the long-stapled sea-island cotton, the seeds are free and merely enveloped in the fibres.

The cotton plant is largely cultivated in India, China, the United States, Egypt, and other countries bordering on the Mediterranean Sea.

Our imports of raw cotton and cotton goods reach the enormous annual value of 155 millions, nearly all being imports of the raw material. Three-fourths of this immense quantity comes from the United States, about one-fifth from Egypt, leaving British India, Brazil, and Peru to provide much of the remainder.

**Flax** fibres were employed as a material for clothing in very ancient times. The plant (*Linum usitatissimum*) is an annual, bearing blue flowers, and is largely cultivated in Ireland and Russia. Our imports of flax amount to about four millions sterling per annum, and are obtained chiefly from Belgium, Holland, and New Zealand. Considerable areas in Great Britain were devoted to the cultivation of flax when the supply from abroad was cut off by war conditions.

**Hemp** is yielded by an annual (*Cannabis sativa*) belonging to the same natural order as the nettle. Our average annual supply from abroad is valued at seven millions and this amount is increasing rapidly.

The plant was brought to Europe from Persia, and is supposed by many to be a native of India; but, like tobacco and the potato, it has a wonderful power of adapting itself to differences of soil and climate. Hence it is now cultivated not only on the plains of Persia, India, and Arabia, but also in Africa; in America, all over its north-eastern states and provinces, and on the flats of Brazil; and in Europe in almost every country. In Russia it is an important article of culture, even as far north as Archangel; and from that region our manufacturers have been accustomed to receive large supplies of this valuable fibre. Half of our annual supply comes from the Philippine Islands (with Guam), the remainder being made up by New Zealand, British India, Russia, Italy and Germany.

**Jute** is the fibre of an Indian plant (*Corchorus capsularis*) belonging to the same natural order as the lime tree. The plant is largely cultivated in India, whence Dundee receives its large supplies of this article. The inner bark of the tree supplies the commercial fibre, just as the inner bark of the lime tree supplies bast and Russia matting. It is widely cultivated in Bengal, the rich alluvial soil and hot, moist climate being favourable to its growth. It is only recently that jute has come into extensive use in the manufacture of textile fabrics in this country. In India, this manufacture has long been an important industry among the Hindus. Dundee is the chief seat of the jute manufacture in Britain. Almost all the jute comes from Bengal, the average annual import of jute and jute goods being over six millions sterling.

**Manila Hemp.**—Manila Hemp is the fibre of *Musa textilis* a plant closely allied to the Banana, used for ropes and matting, and the same plant also yields a finer fibre from which some of the most delicate Indian muslins are made.

**New Zealand Hemp.**—The leaves of *Phormium tenax*, a lily which grows in New Zealand, yield the New Zealand hemp of commerce, one of the strongest vegetable fibres known.

**Vegetable Ivory.**—An ivory now much used by turners for making small trinkets is of vegetable origin, and is the kernel of a nut produced by a palm which grows in the low valleys of the Andes in Colombia and Ecuador. These kernels are known to commerce as *Corozo nuts*.

**Timber.**—The word timber is often employed in a twofold sense. It is applied to such trunks of trees as are suitable, from their size and quality, to be sawn into planks for building purposes, and the planks so obtained are also called timber. Lumber is the name given to timber by our transatlantic kinsmen.

Although neither the strongest nor the most durable, the soft wood timber obtained from the great natural order of cone-bearing trees (*Coniferae*), the pines and firs, is of the greatest value in a commercial sense, because it is plentiful, and therefore of a low price; and it is easily worked. These trees also yield turpentine.

In Sweden and Norway, in Russia and Germany, and especially in Canada, there are vast pine forests from which our main supplies of this timber are obtained; but there are also valuable forests of these trees on the slopes of the Alps and Pyrenees, as well as in Scotland.

The principal timber trees in these forests are the Scotch fir, the spruce fir, the silver fir, the Weymouth pine, and the larch. The timber of the Scotch fir, which is the most valuable is known by the various names of Riga fir, red pine, and red deal. It is chiefly obtained from Sweden, Norway, and Russia. The red pine and pitch pine of America are also valuable.

The Weymouth pine is the coniferous tree of the Canadian forests, and its timber is the yellow pine of American commerce. It is neither so durable nor so elastic as the red pine, but it is more easily worked.

The timber of the spruce and silver firs is called white deal,

or white Norway, Christiania, and Dantzic deal. White deal usually does not warp, and hence is used for floor boards. Spruce poles are much used whole for scaffolds, masts, and flag poles; and, split, for ladders. The timber of the larch is noted for its durability.

First among **hardwood timber** comes the common British oak, which surpasses all other woods in strength and durability. Much oak timber is imported from America; but it is far inferior in quality to English oak.

Other valuable hard woods of this country are the ash, birch, elm, and beech. Of imported hard woods, teak, from India, especially Burma, and mahogany from Central America and the Guinea coast are the best.

The total value of all the timber, both hewn and sawn, imported annually into the United Kingdom is nearly twenty nine millions; supplies in 1914 were drawn from Sweden and Norway, about thirteen millions sterling; Russia, five and a quarter millions; Canada, five and a half millions; the United States, about ten millions sterling; and Germany and India, three-quarters of a million each. London is our chief timber port; after it Liverpool, Cardiff, and Hull receive the largest quantities. In war years much home timber was felled to save shipping.

**The Vine.**—Although cultivated in all the warmer parts of the world, the vine was originally a native of the south of Asia, from whence it has been carried to Europe, Africa, and America. Australian grape vines were imported from Europe.

In this country the fruit of the vine does not arrive at a sufficient degree of perfection to make wine without the addition of sugar; nor is the warmth of the sun powerful enough to dry raisins; we are therefore dependent upon other countries for our supply.

**Raisins** are dried grapes; Valentia raisins being first removed from the plant, scalded, and dried in the sun; Muscatel raisins are dried on the vine and not scalded. The small Sultana raisins, having no seeds, are grown in Turkey in Asia; and the small grapes, known as **currants**, are produced in Greece and the Ionian Islands. Large quantities of all these kinds are imported annually.

**Wine.**—The common grape vine is cultivated in all suitable



climates, the description of wine produced from the grapes varying greatly; some districts are celebrated for a heavy, full-bodied vintage, while others are as famous for wines of a lighter character. Soil, climate, and many other circumstances, are studied by vine growers in making choice of the varieties suitable to particular localities; and, when long in cultivation in a particular spot, a vine has been known to become changed in character from the circumstances just mentioned.

More than one-third of the wine of the world is produced in France; nearly one-fourth in Italy; and less than one-fifth in Spain; the remaining wine producing countries being Austria-Hungary, Portugal, Germany, the Balkan Peninsula, Algiers, Russia, the United States, and Australia. The United Kingdom imports wines to the value of about four and three-quarter millions annually, more than half of which comes from France; less than one-fifth from Portugal; and more than one-seventh from Spain.

**Burgundies**, which are considered by experts to be the finest wines in the world, are chiefly the produce of the vineyards of the Côte d'Or, a department in the east of France, containing the towns of Saumur, Dijon, and Beaune. Australian Burgundies are ousting the French article from many parts of the United Kingdom.

**Champagne** is a wine made from grapes grown in an ancient province of France, to the east of Paris, called by the same name. The white champagnes of Rheims and Sillery are considered the best; those of Ay and Mareuil are more sparkling and less spirituous.

**Claret** is the name used in England to denote the red wines of the Gironde, exported from Bordeaux.

**Hock** is a white Rhenish wine, so-called, from *Hochheim*, near Mayence, in Germany. There are two kinds, still and sparkling.

**Hungarian Wines**, such as *Carlowitz* and *Tokay*, are noted.

**Italian Wines** do not enjoy so high a reputation as those of France; the best known light wines of Italian origin are the *Capri*, of *Naples*, and the *Chianti* of *Tuscany*. The *Marsala* of *Sicily* is a strong wine.

**Lachrymæ Christi** is the name given to one of the best of Italian wines. There are two kinds, the white and the red,

the former being generally preferred. Similar wines are made in Candia, Cyprus, and the islands of the Archipelago.

**Marsala**, a wine resembling sherry in appearance, is made from grapes grown on the west coast of Sicily.

**Moselle** is a white wine exported from the district about the River Moselle, in Germany. It may be obtained either still or sparkling.

**Port** is a red wine, shipped principally from Oporto, whence the name. The grapes from which it is made are cultivated in *Cima de Douro*, a mountainous district in Portugal. Port wine is generally fortified with added spirit before reaching this country.

**Sherry**, so called because it is exported from *Xeres*, is a well-known Spanish wine.

## CHAPTER V.

### COMMERCIAL PRODUCTS OF ANIMAL ORIGIN.

**Living Animals (*for food*).**—Live cattle are sent across the Atlantic from the United States to the United Kingdom to supply the demand of the English market. Holland also contributes a large number of calves, and, with Germany, she sends her surplus stock of sheep and lambs. Formerly seven millions sterling was the average value of living animals—oxen, sheep, and lambs—imported into this country annually.

This large amount is chiefly supplied by the *United States* and *Canada*.

**Bones.**—Most of the bones imported into this country are brought from the cattle-feeding plains of South America.

Bones are a very important article of commerce. After having been boiled to extract the fat, which is used in soap and candle making, the larger kinds are employed for knife handles, tooth and nail brushes, combs, paper-knives, spoons, etc.; the smaller, for buttons and a variety of other small articles. The shavings and bone-dust made in fabricating these articles are used to make animal charcoal, a substance much used in sugar refining. Bones are also used as manure.

**Butter and Margarine.**—Nearly twenty-one millions are expended annually by the people of the United Kingdom for foreign butter, and one and a half millions for margarine. Nearly half of the butter imported comes from Denmark; other countries adding to the supply being France, Sweden, Holland, Canada, Victoria, New Zealand, and New South Wales. Practically all of the margarine comes from Holland. Large quantities of margarine are now produced in the British Isles, and the quantity of butter consumed tends to diminish.

**Camel's Hair.**—Camel's hair is an article of commerce in the east, where the Arabs and Persians make of it stuffs for carpets, tents, and wearing apparel. The French manufacture hats from it. The fine hair from which artists' pencils are made is imported from Smyrna, Alexandria, and Constantinople, but it really comes from Persia. There are

three qualities, black, the most valuable; red, the second quality; and grey, which is worth about half as much as the red.

**Cheese.**—Nearly sixteen million pounds' worth of cheese is imported annually by the United Kingdom. Most of this comes from Canada, the United States, and Holland. As a general rule, Canadian cheese is much better than that from the States, owing to the fact that the cattle of Canada are not allowed to roam about the woods and pick up nuts for food. Cheese is also exported by the Netherlands, France, and Switzerland. It should be noticed with interest that cheese is one of the few articles in which the supply from Greater Britain in 1914 exceeded that from foreign countries, the figures being Canada, three and a half millions sterling; United States of America, one and three-quarters of a million; Holland, nearly one million; France, one-tenth of a million; and Australasia, one-quarter of a million.

**Cochineal.**—The beautiful red dye, known as cochineal, is obtained from *Coccus cacti*, a small insect infesting a tribe of cacti growing in Honduras and parts of South America. The cochineal insect is also cultivated in Mexico, Teneriffe, Java, and the West Indies. The price of cochineal has fallen considerably of late years owing to the competition of artificial colouring.

**Cordovan.**—Leather, prepared from goats' skins, for use in bookbinding and some fine kinds of boots and shoes, was originally manufactured by the Moors of *Cordova*, whence the name. It is now obtained from the Levant.

**Eggs.**—About 1,250 million eggs, valued at about four and a half millions sterling, are imported each year by the United Kingdom. Denmark, Belgium, France, and Canada compete for this trade in the order named.

The trade in eggs formed no inconsiderable branch of our commercial intercourse with the continent of Europe, as English poultry were not numerous enough to supply the demand. However, vast quantities of eggs are brought from the country districts and from Ireland, to London and other large towns. Limitation of shipping facilities has led to a great decrease in this trade, and to a considerable increase in the price of eggs. Besides being used as food, large quantities of eggs are used in calico printing, and other industries.

**Feathers.**—Feathers form a considerable article of commerce. Those of the *ostrich* are highly valued, and farms on which these birds are domesticated are to be found in Cape Colony. Many parts of England and Scotland supply feathers for beds, and an inferior sort is produced in Ireland. The finest feathers used for this purpose are those of the *Eider Duck*, which are imported from Greenland, Iceland, and Norway. Our main supplies of feathers come from France, China, Hong Kong, and the United States.

**Down**, or the first covering of young birds, is also an article of commerce; and the down of the swan is imported from Dantzic, together with large supplies of superior feathers.

**Fish, etc.**—In spite of the myriads of food fishes caught in British seas, the United Kingdom imports fish to the value of nearly seventeen and a half millions sterling annually.

This includes *fresh fish* valued at about three millions. *Cured and salted fish* are supplied by British North America, four millions sterling; United States, about six millions; followed by Norway and France in the order named. Our *export of fish* reached in 1918 the total value of just over a million sterling.

The fish-eating peoples of southern Europe, such as Spain and Italy, depend to some extent upon the cod-fisheries of Norway and Newfoundland. The tinned salmon of British Columbia and the United States is found in every European market, and British preserved herrings are exported to almost every country of the world.

The **salt-water fisheries** of very great value are few in number. •

The **Banks**, a great area covered with shoal water off the shores of Newfoundland and Nova Scotia, are the most prolific fishing grounds in the world. They are annually visited for *codfish* and *halibut* by about five thousand vessels from the United States, Canada, the United Kingdom and France.

The fishing banks which rank next in productiveness are those of the North Sea. These are visited for *cod-fish*, *herrings*, and *flat fishes*, by the fishermen of the United Kingdom, Norway, France, and the Netherlands.

**Fish Culture** is now carried on systematically in the United States and Germany. Valuable food fishes from one part of the world have been transported to other parts and

propagated in new or exhausted fishing grounds. Rivers have in this way been re-stocked with salmon; and artificial oyster beds have been planted in various parts.

**Furs.**—Fur is the name given to the skins of animals when the hairs are very fine and close. Man, having observed how completely animals are protected by their warm coverings, has, from the earliest times, taken them for his own use. In cold climates, many thousands of animals are annually destroyed; the skins are dried with the fur on, and then used for clothing. Although to a great extent in this country furs are merely worn for ornament, we annually spend more than two and a half million sterling on these adornments.

The fur most prized is that of the *ermine*, which is merely the skin of a stoat in its winter dress; the furs of the squirrel, badger, sable, seal, beaver, and bear are supplied, with this, from the United States, Canada, and British India.

The skins of the fur-seal come principally from the *Pribilof Islands*, in the Behring Sea. These islands form part of the United States' territory of Alaska; and, in order to prevent the extermination of these animals, the government of the United States limits by law the number of these animals which may be taken annually. For many years all seal-skins were sent to London to have the long hairs plucked out, to be dyed brown, and so prepared for use; but many are now treated in the United States.

The world's chief fur markets are *Leipzig*, *Nijni Novgorod*, and *London*, which is also the chief centre for their preparation. Nearly all the furs from the *Dominion of Canada* are sent to London, as are also most of the inferior fur-skins of South America and Africa. The furs sold at the fairs of Leipzig and Nijni Novgorod are mostly prepared from the valuable skins of the Russian Empire.

It is worthy of note, as an example of twofold commercial exchanges, that the United States export to the United Kingdom most of their seal pelts, worth about a million sterling annually, and import dressed furs of about equal value from the United Kingdom.

**Hams.**—The best hams are cured in *Yorkshire*, *Hampshire*, *Wiltshire*, and *Cumberland*, in England; in Scotland, *Dumfries* and *Galloway* are the counties famed for them. On the continent the hams in greatest repute are those of

*Westphalia* and *Portugal*. Mutton and beef hams are chiefly prepared in the north of England and the border counties of Scotland.

**Hides and Skins.**—These form a very important import indeed, as the leather industry of the United Kingdom is a very large one. The annual import of raw hides amounts to about twelve and a half millions sterling, while another million and a half is expended on goat skins, and two millions on sheep skins.

*Raw hides*, both wet and dry, are imported from British India, South Africa, the Straits Settlements, and Uruguay.

*Skins* are imported from Australia, Cape Colony, the United States, Canada, British India, and New Zealand.

*Undressed leather* is supplied by the United States, British India, Holland, Australia, Belgium, and the Cape of Good Hope.

**Horns.**—True horns are borne by such animals as the ox, goat, sheep, and antelope; but the term horn is incorrectly applied to deer antlers, which are composed of solid bone and are shed annually, while true horn is permanent.

The horns used for manufacturing purposes are imported in large numbers from Russia, the Cape, British India, South America, and the United States.

**Isinglass.**—Isinglass, a word which literally means the bladder of sturgeon (German *hausenblase*), is a very pure form of gelatine prepared from the air bladders or sounds of several fishes; but the finest is prepared in Russia from the entrails of the sturgeon. Large quantities of isinglass are also imported from America and the East Indies.

**Ivory.**—Ivory is the hard bony substance forming the tusks and teeth of several animals, as the elephant, hippopotamus, walrus, narwhal, and spermaceti whale. The chief and best supply of elephant ivory comes from Africa; the tusks occasionally weighing from fifty to seventy pounds, and averaging about twenty pounds each.

Large quantities of tusks of an extinct, long-haired elephant, the mammoth, are found in the frozen soil near the rivers of northern Siberia. This ivory is, however, of inferior quality.

**Leather.**—Although very many persons are employed in tanning leather in the United Kingdom, much is imported.

Under the term "leather," the following articles are included :—

1. *Hides*, tanned, curried, or dressed in any way ;
2. *Goatskins* dressed ; and
3. *Sheepskins* dressed.

Dressed hides and skins, to the amount of about nine millions sterling, are annually being imported into this country, chiefly from the United States, two and a half millions ; British India, two and a half millions ; Australasia, one and a half million ; and France, one million. In addition to the above we annually import *boots and shoes* worth three-quarters of a million sterling ; and *gloves* valued at one and a half millions. Morocco leather is tanned with sumach ; Russia leather, with birch bark ; and glove leather is preserved with alum and salt.

**Meat.**—An enormous quantity of meat for human food, beef and mutton, valued at between 61 and 62 millions sterling annually, is imported into the United Kingdom.

During long journeys, either by sea or land, it is of importance to preserve fresh meat ; and there are two methods of doing this.

1. By the application of a temperature below the freezing point of water ; and this method has long been attended by success, frozen carcasses of sheep and oxen being imported from *Australia* and *New Zealand* to this country.

2. By preserving food in air-tight vessels. This plan presents many advantages, as small cases of food can be carried by voyagers and travellers. A large trade in "canned meats" from *Australia* and *America* has recently been developed.

Very little salt beef is imported ; but fresh beef, valued at nearly nineteen millions sterling, more than three-fourths of which comes from the United States, reaches this country annually. Fresh beef is brought from the United States in a "chilled" condition, being kept at a temperature just above freezing-point during the voyage across the Atlantic.

**Bacon.**—The value of the bacon annually imported is as much as ninety millions sterling, chiefly from the *United States*, *Denmark*, and *Canada*. The price paid for the quantity, however, was probably abnormally high.

**Hams**, reaching the annual value of thirteen millions sterling, are also imported from the *United States* and *Canada*.



The great *pork-packing centres* of the United States are Chicago, St. Louis, Kansas City, and Cincinnati. Live hogs are not exported.

**Fresh Mutton.**—The supply of this commodity reaches the annual value of over nine millions sterling, three-fifths of which is exported by *Australasia*, and most of the remainder by the Argentine Republic.

**Herding, or Ranching,** names given to the raising of cattle in great numbers, for beef and hides, can only be carried out in *thinly-populated regions* which are well watered, and where nutritious grasses grow. The largest cattle-grazing areas in the world are in North and South America. Smaller tracts devoted to this industry are in Australia and British India.

The great part of the North American beef supply is obtained from that part of the United States situated on the plateau to the east of the Rocky Mountains, and the new districts of Canada similarly situated. These are the treeless, grassy regions of the *Great Plains*, where tillage has not yet taken the place of *pasturage*. The herds of this vast area are driven or transported by rail to the chief *meat-packing centres*, Chicago, Kansas City and S. Omaha. At these points the beef is dressed for market, and the hides also become a commercial commodity.

The principal *cattle herds of South America* graze upon the plains watered by the rivers *Plate* and *Orinoco*. The exports from these regions are chiefly of *hides* to France, England, and the United States; although considerable quantities of salted and canned beef and beef extract are sent to Europe from the Pampas country.

The transport of fresh beef and mutton to distant points for consumption, though now a great business, has grown up within a very few years. Beef comes to the ports on the Atlantic seaboard of the North American continent, from the west, in refrigerator cars, and is shipped abroad in iced chambers. In a similar way, the fresh mutton of New Zealand is shipped to the London markets, although the steamship route for this traffic lies across the tropics. Thus, a valuable trade has been created simply by combining steam transport with artificial refrigeration.

**Mohair.**—Mohair, a material for textile fabrics, consists of

the hair of a goat which inhabits the mountains of Angora, in Asia Minor. Certain laces and braids are woven from it as well as shawls.

The Angora goat is also domesticated in the Cape of Good Hope, and the import of mohair from South Africa is equal in quantity to that from Turkey in Asia, but is not of so good a quality.

**Mother-of-Pearl.**—Mother-of-pearl is the name given to the hard, lustrous, brilliant inner layer of oyster and clam shells of the tropics. Very large quantities of this substance are consumed in the manufacturing establishments of Birmingham and Sheffield, where the handles of knives, buttons and various ornamental fittings for fancy articles are made. The shells are imported from the islands of the Pacific and from Australia.

**Peltry.**—Peltry is the name applied to the undressed, though dried, skins of the fur-bearing animals.

**Pemmican.**—Pemmican is a preparation of dried meat, originally made only by the North American Indians, but lately introduced into the victualling yards of the Royal Navy.

**Satin.**—In France, the chief seat of the satin manufacture is at Lyons, and in Italy, at Genoa.

**Silk.**—As everybody knows, silk is the product derived from the cocoons of several kinds of moths; the greater part of the silk of China, Italy, Japan, and France being made of the cocoons of the Mulberry moth (*Bombyx mori*). Indian silk is the product of many species of moths.

The manufacture of silk goods has never been a great industry in this country; but, as silks are largely worn in the United Kingdom, and are also required by British merchants for export, they are important commercial commodities. Thus it will be seen that while we import raw silk to the value of about one and a quarter millions annually, we spend about sixteen and a half millions for manufactured silk goods. About three-fourths of these silk goods come from France, and most of the remainder comes from China, British India, and Japan.

Silk culture has been an industry among the Chinese for thousands of years. It was introduced into Japan and Persia about two thousand years ago; and a few centuries later the industry was established in Asia Minor, and also in Spain,

*Italy* and *Greece*, the three peninsulas of southern Europe. In recent years, silk-raising has become an important industry in *British India*.

Although other parts of the world seem well adapted for silk culture, and although many efforts have been made to increase the area devoted to this industry, none of these attempts has met with much success. As the business of preparing the raw silk requires much time, it is unprofitable in countries where labour commands high wages.

*China* and *Japan* export only their surplus silk, making use of a great proportion of their produce in home manufactures. In spite of this, the total production of these countries is so great that, together with *Italy*, they supply a very large proportion of the raw silk of commerce. The industry has never disappeared from Spain and Greece, but the yield of these countries is small.

*France* is the leading country of the world in silk manufactures, and Lyons, the centre of the industry, is the world's greatest market for silk goods. *Germany* ranks second as a silk manufacturing country, and Crefeld, in Rhenish Prussia, is the busiest centre of it there. The *United States* stands third as a silk manufacturing nation; New York and New Jersey being the leading states engaged; but America has scarcely any export trade in silks. In *England*, the silk manufacture still lingers in Spitalfields, a part of London, in Manchester, Derby, and Macclesfield. Milan and Turin are the most important centres in Italy, and Zürich and Basel in Switzerland.

**Wool.**—Short stapled wool is more scaly, and its fibres are more wavy than long stapled wool; hence, the former is better suited for the manufacture of *broadcloth*, while the latter is woven into such *worsted fabrics* as alpacas, poplins, etc.

The great wool growing countries of the world, in order of the value of the product, are *Australia* and *New Zealand*, *Russia*, the *United States*, *Argentina*, and *South Africa*. With the exception of the United States, none of the countries named manufactures much of its own wool. The Australasian and South African produce goes almost entirely to the mills of the United Kingdom. Nearly all the Argentine wool is sold to France and Germany. In the United States, the home supply, although very large, does not equal the demand.

In Woollen Manufactures, the United Kingdom takes the lead, with France second, the United States third, Germany fourth, and Austria-Hungary fifth. The London wool market is the greatest in the world; the great wool ports being *Melbourne, Sydney, Brisbane, Adelaide, Wellington, Buenos Aires, and Cape Town.*

In *Kashmir* and other parts of Northern India, an animal called the Kashmir, or "shawl" goat, supplies a very soft and lustrous wool, which is woven into shawls that fetch a very high price owing to the amount of labour expended on them.

The following particulars of our import trade in wool should prove interesting :—

Wool of sheep and lambs is imported from *Australasia*, thirty-two and a half millions sterling annually; *British S. Africa*, five and a quarter millions; *British E. Indies*, two and a half millions; the remaining three and three-quarter millions' worth being supplied by South America, France, Turkey, Belgium, Russia, and Spain in the order mentioned. We also spend about a quarter of a million sterling annually in *alpaca, vicuña, and llama* wool, which we obtain from South America. *Mohair*, from Turkey in Asia, costs us about half a million pounds a year, and we pay our South African colonists more than half a million annually for this commodity. We also lay out considerably more than half a million sterling in woollen rags for the shoddy mills of Yorkshire.

N.B.—All the figures given are calculated upon an average of the last few years. Trade was very brisk in 1907; there was a rapid decline in 1908, followed by a rise in 1909 and a still further rise in 1910 and subsequent years. The Great War of 1914-1918 brought changes which would modify the figures, but it is thought that most permanent information is conveyed by leaving the figures for the war years out of account.



BLACK SABLE TRAPPING IN NORTHERN CHINA  
AND SAGHALIEN.

*The trap is composed of two slender tree trunks, set one above the other with a springy piece of brushwood containing bait, the slightest touch of which causes the trees to close upon the victim.*

(See page 58.)





COD-FISHING OFF THE BANKS OF NEWFOUNDLAND.

(See page 77.)

## PART II.—THE UNITED KINGDOM.

### CHAPTER VI.

#### INTRODUCTION.

**Position.**—Almost exactly in the centre of all the land on the face of the earth stands a group of islands, consisting of two large and several hundred small ones. The two largest islands of this group are *Great Britain* and *Ireland*, better known collectively as *the United Kingdom of Great Britain and Ireland*.

Perhaps no country was ever more favourably situated for commercial success than the United Kingdom. As has already been stated, it is in the centre of all the land on the globe; and, owing to the enterprise of its people, it has become the mother-land of the greatest empire ever seen.

The hemisphere of which London is the centre includes sixteen-seventeenths of the land on the face of the earth. Then, as to the position of the United Kingdom with regard to the continent of Europe, it stands on the western sea-board, where most of the great European seaports are situated, and where the great industries of that continent have been most strongly developed.

The land being an island has been of immense advantage to the people of Great Britain. It gives them an easily defended frontier, about which there can be no dispute; and, while it renders them safe from hostile attacks as long as they maintain a powerful fleet, it gives them great advantages for trade, which they have not been slow to utilise.

The islands of Great Britain and Ireland are situated in the North Atlantic Ocean, off the western shores of the continent of Europe, opposite to the northern parts of France, Holland, Belgium, and Denmark, and the southern part of Sweden and Norway.

**Great Britain**, which, from its superior size and importance, has given its name to the United Kingdom and the



empire, is not only the largest of European islands, it is one of the largest in the world. It lies to the east of Ireland, and approaches, at its south-eastern extremity, to within twenty-one miles of the opposite coast of France. To the south of the British Isles we have the English Channel; to the east, the North Sea, or German Ocean; and to the north and west, the broad expanse of the Atlantic.

Ireland lies to the west of Great Britain, and is everywhere surrounded by the Atlantic Ocean, except on its eastern shores, which are separated from Great Britain by the St. George's Channel, the Irish Sea, and the North Channel. The distance between Fair Head, in Ireland, and the Mull of Kintyre, in Scotland, is only fourteen miles; that between Kingstown and Holyhead, the chief commercial route between Ireland and Great Britain, is about sixty-four miles.

**Configuration.**—Great Britain is very irregularly shaped, being deeply indented by numerous gulfs and arms of the sea; but, on the whole, it approaches to the shape of a wedge, being narrowest in the north and broadest in the south. In shape, Ireland is rhomboidal; and although it has many noble bays and harbours, it is less indented by gulfs and arms of the sea, and is decidedly more compact than Great Britain.

The **Coast line** of the United Kingdom is extremely long, considering the size of the country. That of Great Britain has an extent of four thousand two hundred miles, to which, if we add the coast line of Ireland, two thousand two hundred miles, we get nearly seven thousand miles of coast, for an area of about one hundred and twenty-one thousand square miles, or about one mile of coast to every seventeen miles of area.

## CHAPTER VII.

### ENGLAND AND WALES.

**General Remarks.**—The ancient kingdom of England, under which name the principality of Wales is usually included, is the chief division of the United Kingdom. It is the country in which it is no vain boast to say that the arts and institutions of social life have made the greatest advance of any country in the world. It enjoys a situation, which has, undoubtedly, tended much to make the country what it is, both politically and socially. The island of which it is the southern and larger portion, is separated from neighbouring countries by a sea of sufficient breadth, in most parts, and sufficiently stormy, to throw great difficulties in the way of an invading force.

It is situated in a temperate latitude, and is further saved by the surrounding seas from those extremes of heat and cold and excesses of drought and moisture to which continental countries are often subjected.

While there are some districts, chiefly in the west and north of the country, in which mountains and hills may be said to prevail, the country may be described, in general terms, as level and fertile. Almost everywhere the eye rests upon the evidences of long continued cultivation, in rich corn-fields and meadows surrounded by well-trimmed hedges and rows of trees. The elm-surrounded Gothic parish church, the clean village cottages with their honeysuckled porches, and the well-wooded parks with the residences of the noblemen and gentry, are other notable features in the landscape.

Turning from rural scenes, we see striking evidences of an advanced civilisation in the frequent brick-built towns, often overhung by clouds of smoke resulting from the coal everywhere used both for domestic and manufacturing purposes. The peculiar features of some of these cities, such as Liverpool, Hull, and Bristol, vast ports for merchant shipping; Manchester, Birmingham, Leeds, and Sheffield, seats of extensive manufactures; and London, the greatest port and manufacturing city of them all, will be alluded to later on.

**Mountains.**—Wales and the western side of England are, generally speaking, mountainous. The chief systems are :—

1. The **Devonian System** stretches from Somersetshire through Devonshire into Cornwall, and ends at Land's End. The loftiest points in this range are from 1,400 to a little over 2,000 feet high, *Yes Tor*, the highest point, being 2,077 feet above the level of the sea.

2. The **Cambrian Mountains** include all the mountains of Wales, its highest point being *Snowdon*, 3,571 feet above sea-level.

3. The **Pennine Range** stretches from Derbyshire to the southern boundary of Scotland, its loftiest point being *Cross Fell*, 2,900 feet high.

4. The **Cumbrian Group**, with three summits more than 3,000 feet high, fills up most of Cumberland and Westmoreland. The highest peaks are *Scaw Fell*, 3,166 feet; *Helvellyn*, 3,050 feet; and *Skiddaw*, 3,022 feet.

**Rivers.**—Owing to the limited extent of England, it contains no rivers of continental magnitude; but there are, nevertheless, some fine navigable streams of great commercial value, such as the *Thames*, *Tyne*, and the *Humber rivers*—the *Ouse* and *Trent*—on the eastern side of the country; and the *Mersey* and *Severn* on the western side. The *Tees*, *Wear*, *Dee*, and *Bristol Avon*, are minor, but not inconsiderable streams.

**Geological Structure.**—The surface of England includes specimens of the whole series of rocks, from the earliest, which are found in the mountains of the west, to those of latest formation.

In *Cornwall* and *Devonshire*, hills of granite, serpentine and felspar-porphry occur, while the slopes resting on them are composed of different kinds of *slate*. The *granite* of this district is much used for paving, although it is considered less hard and durable than that brought from Scotland. From the decomposed granite is prepared *kaolin*, or china-clay, for the "Potteries" of Staffordshire.

The *Welsh Mountains* are composed chiefly of varieties of *slate*, with some intermixture of volcanic rocks, while a rich coal-field, one hundred miles in length and of varying breadth, rests upon their southern verge, extending from Glamorgan into Pembrokeshire, being the largest coal-field in Great

Britain. This region is the great source of anthracite or steam coal, which is exported from Cardiff to all parts of the world.

The *Cumbrian Group* of mountains is chiefly composed of slate rocks, there being only one mountain of granite—Shap Fell.

Between these ranges of mountains, and a line drawn from Exmouth through Bath, Gloucester, Leicester and Nottingham, to Stockton-on-Tees, the surface of the country is composed chiefly of stratified rocks, including rich beds of coal, the existence of which, at and near the surface, is mainly what has enabled England to become the first manufacturing country in the world.

The eastern parts of the county of Northumberland, from the River Tees northward nearly to Alnwick, form a very valuable coal-field of numerous beds, from which much of the coal used in London and other places in the east of England is taken. The Cleveland iron district of the North Riding of Yorkshire is also supplied with coal from this *Northumberland and Durham Coal-field*.

Another coal-field of great value, upon which the manufacturers of Manchester and the neighbouring towns depend, is the *South Lancashire Coal-field*. It extends northward from Macclesfield nearly to Preston; westward to Prescott, near Liverpool; and eastward to the Pennines.

To the east of the South Lancashire Coal-field lie the coal measures of *Yorkshire, Nottingham, and Derby*, one long stretch of coal-beds, extending from Nottingham and Derby in the south, to Leeds and Bradford in the north, a distance of more than sixty miles, with an average width of twenty. The new section of this coal-field now being rapidly opened up in the east round Doncaster promises to have an enormous output in spite of the great depth of the seams. Immingham on the Humber, opposite Hull, will be the port of this region.

The *Whitehaven Coal-field* lies along the eastern coast of the Irish Sea, from Whitehaven to Maryport, and then inland, forming an arc about thirty miles long. The iron district of Furness, as well as the manufacturers of Belfast, draw part of their coal supplies from this source.

Turning southward, we come to the *Shropshire Coal-fields*,

which include those of the Forest of Wyre, of Coalbrookdale, and of the Plain of Shrewsbury. To the east of these we find the *South Staffordshire Coal-field*, between Birmingham and Wolverhampton; the *Warwickshire Coal-field*, to the north of Coventry; and that of *Ashby-de-la-Zouch*, in Leicestershire. The *North Staffordshire*, or Potteries Coal-field, may be said to extend over at least one hundred and fifty square miles.

About twelve miles from Bath is the *Somersetshire Coal-field*, a curved tract of country about twelve miles long and three miles wide. To the north is the *Bristol Coal-field*, of about the same size as the last.

The average coal output of the United Kingdom is over two hundred and fifty million tons, which is valued at one, hundred and twenty-five millions. This is raised chiefly in the following counties, the figures giving the value of the products in millions sterling:—Glamorgan 19·0; Durham, 15·5; Yorkshire, 13·4; Lancashire, 10·0; Monmouth, 6·3; Derbyshire, 5·9; Lanarkshire, 5·7; Staffordshire, 5; Northumberland, 5; Nottingham, 4.

To the east of the imaginary line drawn from Exmouth to Stockton-on-Tees, the rocks found, in succession, are red sandstone and red marl; lias-limestone and lias-clay; oölitic-limestone; greensand, with clay; and finally, chalk.

Connected with the red marl great beds of *rock salt* are found; and these are extensively worked in Cheshire and Worcestershire. The salt mines of Northwich are the most remarkable; for here the quarries, with their pillars and crystal roof extending over many acres, form a fine sight. At Nantwich and Middlewich in Cheshire, Droitwich in Worcestershire, and Weston in Staffordshire, there are salt springs. The salt manufacturers sink shafts to enable them to reach the brine, which they pump up, and then extract the salt by evaporation.

*Rock Salt* is mined in Lancashire, near Fleetwood, and in Cheshire; *Brine salt* is also made in the same counties, in Staffordshire, at Port Clarence in South Durham, in Worcestershire, and near Middlesbrough in Yorkshire.

The *Lias formation*, which extends from Lyme, in Dorsetshire, to Whitby, in Yorkshire, is remarkable for the remains of extinct gigantic reptiles.

Beds of *Oolitic* limestone, so called from the small egg-like concretions contained in it, cover the southern parts of Gloucestershire, the greater part of Oxfordshire, Northamptonshire, and Rutlandshire. Portland stone, so extensively used for building purposes, which is quarried at Portland, belongs to this class of rocks, and so does the building stone of Bath.

*Chalk* exists nearly everywhere to the south-east of a line commencing on the south coast near Dorchester, passing along the northern and western side of Salisbury Plain, the Marlboro' Downs, the Chilterns, the E. Anglian Heights, the Lincoln Wolds, the Yorkshire Wolds, and so onward to Flamborough Head, excepting in parts of Sussex and Kent, where it has been removed by denudation, exposing a peculiar formation called the *Wealden*, and in the basin of the Thames, around London, and one or two other places where later beds of clay occur above it.

**Metals and Minerals.**—*Tin ore*, containing about seventy-five per cent. of the pure metal, is found in thick veins or vertical beds in the granite of Cornwall, where it has been mined for several centuries. Mining was resorted to when the supply of stream-tin, which had been famous for ages, farther back than the Roman conquest of Britain, became exhausted. The principal mines are near Camborne, Illogan and Penzance; and the yield is now worth very nearly a million sterling.

**Copper ore** is found chiefly in Cornwall at St. Just near Land's End, and in Anglesey near Amlwch. The Cornish copper is generally found in the deeper parts of the veins of tin, and as a continuation of them; and in several of the same veins, lead, antimony and zinc are also found. The amount produced, however, is only about one per cent. of the world's supply.

**Iron.**—Next in importance to coal as a mineral product is iron, which is extensively diffused through the country, though chiefly wrought only where coal and limestone, in some form or other, occur in the same neighbourhood. Much of the iron for which Great Britain is so famous is manufactured in the Cleveland District of Yorkshire, round *Guisborough*, where the thriving town and port of Middlesbrough on the Tees has grown up so rapidly, and where, at night, the whole country is aglow with iron furnaces. Next in order of productiveness

comes *Cumberland*, where important iron smelting districts are to be found round Egremont and Millom. In North Lancashire is the *Furness* District, so noted for its hematite, where the furnaces round Dalton and Barrow rear their lofty heads. In *Staffordshire* are the ironworks of Coalbrookdale. In *Lincolnshire*, near Frodingham, and in *Northamptonshire* there are some oölitic sands which yield quantities of Siliceous ironstone. In the output of iron, the United Kingdom has been relegated to the third place, the United States and Germany occupying the first two.

**Lead.**—Lead is mined in Flintshire, Derbyshire, Durham, the Isle of Man—at Foxdale—and Westmoreland. The lead-mines of Derbyshire are well-known, not only for that metal, but for the beautiful veins of fluor spar which accompany it, of which ornaments are made. **Silver** is obtained from most of the lead ore, most coming from Flintshire, the Isle of Man, Durham and Westmoreland. The production of gold has fallen off greatly in late years, the bulk of the supply now coming from Dolgelly in Merionethshire.

**Limestones** are raised for both iron-smelting and building purposes. The principal quarries are in Carnarvonshire, Cumberland, Derbyshire, Durham, Glamorganshire, Lancashire, Somersetshire, Wiltshire, and Yorkshire.

**Chalk** is quarried both for manure and for building purposes, chiefly in Kent, but also in Surrey, Essex, Hampshire, Sussex, Bedfordshire, and Lincolnshire.

Large quantities of **Slate**, shipped at Bangor, Carnarvon, and Portmadoc, are the produce of the quarries of Bethesda, Llanberis and Blaenau Ffestiniog respectively. Slate is also quarried in Cornwall, Lancashire, and the Isle of Man.

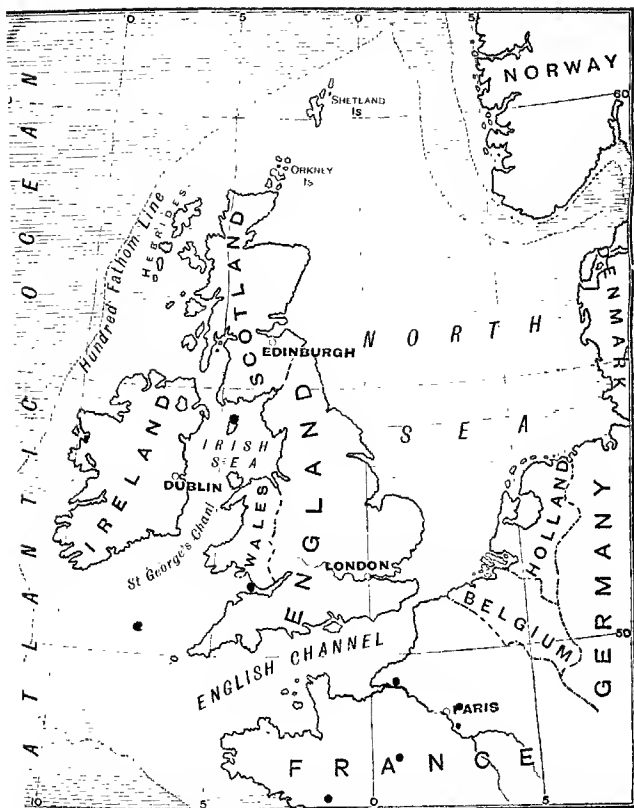
In even this brief account of the minerals of England it would be improper to overlook its **Clay**, so extensively used in the manufacture of pottery, chiefly in Staffordshire, and in making bricks and tiles for building. Cornwall is specially noted for its kaolin or *china clay*, which is shipped from Fowey to Liverpool (for the Potteries), London, the United States and the continent; and Staffordshire is celebrated for *brick clay*. Other clays of commercial importance are Stourbridge clay, Sheffield *fire-clay*, Dartmoor *kaolin*, the *bipe-clay* of Devonshire, and the *fuller's earth* of Reigate and Nutfield, in Surrey.





Scale:  
140 miles to an inch.





BRITISH ISLES WITH NEIGHBOURING PARTS OF THE CONTINENT.

*Scale 75 miles to the Inch.*

*Scale 75 miles to the Inch.*



**Soils.**—The south-eastern division of England, on which a comparatively level surface prevails, exhibits a soil which is either chiefly chalky or chiefly clayey, according to the nature of the underlying rock. There are a few sandy tracts, of which Bagshot Heath, in Surrey, may be cited as an example.

In the mountainous districts, the usual light soils resulting from the decay of the older rocks are found, except where there is a mixture of peat.

It will be convenient here to consider this subject more in detail. The greater part of Middlesex, Essex, Hampshire, Dorset, Essex, Suffolk, and Norfolk rest upon the London, or plastic, clays. The soils on this formation are naturally strong, heavy, and tenacious; and they shrink and crack in hot weather. When mixed with sand, these clays form fertile loams.

In Norfolk and Suffolk, there are some sandy soils which are rendered fertile by a mixture of chalk, and by feeding sheep upon them.

A great portion of the chalk lands of Dorsetshire, Berkshire, Sussex, and Kent are utilised for sheep-walks. Oolitic soils vary much; some are only fit for sheep-walks, others are extremely fertile; while the fruitful fens of the district round the Wash rest upon the Oxford clay.

The celebrated dairy districts of Somerset, Gloucester, Warwick, and Leicester rest, for the most part, upon the Lias formation, as do also many of the best grazing and pasture lands of Nottingham and Yorkshire.

The *New Red Sandstone* soils of the West of England are, generally speaking, very fertile; but the soils which overlie the *coal measures*, the millstone grit and the mountain limestone, are not very fertile, as a rule. The *Old Red Sandstone* soils of Hereford are extremely fertile, and, like the New Red Sandstone soils of Devonshire, are specially suitable for apple growing. Lastly, the soils which overlie the older rocks in the neighbourhood of the mountains are fertile when they contain much lime, but only fit for rearing cattle where they are poor in that necessary ingredient of all fertile soils.

The granite soils of Cornwall and Devon are found to be more productive as the hills diminish in height. Thus Dartmoor is covered only with heath, coarse grass, and

peat, while, in the Scilly Isles, similar soils produce good crops of all kinds.

**Climate.**—The climate of England is remarkably exempt from extremes of heat and cold; but it displays an immense amount of variation within a very narrow range of temperature. The average winter temperature is about  $42^{\circ}$  Fahrenheit; that of summer, about  $62^{\circ}$ . It is only on rare occasions that the thermometer rises to  $80^{\circ}$ , or falls below  $20^{\circ}$ .

The proximity of every part of the country to the sea, which partly accounts for the small range of variation in the temperature, is also the cause of the moisture of the climate. Being thus subject to coldness and dampness, it is more favourable to the growth than to the ripening of fruits and other vegetable produce. It is certainly not unfavourable to, either the physical or moral condition of the people. Even its uncertainty has perhaps been the subject of too much grumbling.

South Devon, the Isle of Wight, and some neighbouring districts on the south coast, enjoy an average winter temperature, two, three, four, and even, in some instances, five degrees above the rest of the country; and these districts are the resorts of invalids.

More rain falls in the western than in the eastern parts of England; and more in the north than in the south. The moist climate, indeed, clothes the vales and meads with a verdure unknown in most other lands, but is injurious to the health of the inhabitants, by causing colds, coughs, and favouring consumption.

The climate of Wales differs but little from that of England. The southern counties and the coast generally enjoy a mild, uniform, and genial air. Keen frosts occur but seldom, and long continued ones are still rarer. The extremes of heat and cold are less marked, and the change from one to the other, more gradual than in most other parts of Great Britain.

**Vegetable Productions.**—The most conspicuous feature in the aspect of England is the fresh and luxuriant herbage, resulting from the humidity of the climate; and this, although often overlooked by the natives, from their being so familiar with it, never fails to strike a foreigner with surprise.

Much of the surface of England was forest land in the middle ages; but this has long ceased to be the case, and

the woodlands of modern times are restricted to particular districts, to the neighbourhood of great mansions, and to the hedgerows of fields. Several large royal forests still exist in England, the chief of which are the *New Forest*, in Hampshire, the *Forest of Dean*, in Gloucestershire, *Windsor Forest*, in Berkshire, *Epping Forest*, in Essex, *Sherwood Forest*, in Nottinghamshire, and the *Forest of Arden*, in Warwickshire.

These were in olden times scenes of courtly sport; but they are now, in part, reduced to cultivation, or reserved for the production of timber to be used in the public service.

The *parks* surrounding the seats of the nobility and gentry are a peculiar and most inviting feature of the English landscape. A mixture of green open glades, with masses of old well-grown timber, they are scenes of great sylvan beauty; while the existence of so much ground reserved for pleasure in a country where nearly every acre would be profitable under tillage, conveys a strong impression of the riches of England.

#### The principal English timber-trees.

Alder ( <i>Alnus glutinosa</i> ),	Lime ( <i>Tilia</i> ), several species,
Ash ( <i>Fraxinus excelsior</i> ),	Maple ( <i>Acer campestre</i> ),
Aspen ( <i>Populus tremula</i> ),	Oak ( <i>Quercus robur</i> and <i>sessiliflora</i> ),
Beech ( <i>Fagus sylvatica</i> ),	
Birch ( <i>Betula alba</i> ),	Poplars ( <i>Populus canescens</i> , or
Elm ( <i>Ulmus campestris</i> ),	white poplar; and <i>P. nigra</i> ,
Fir ( <i>Pinus sylvestris</i> ),	or black poplar),
Hornbeam ( <i>Carpinus betulus</i> ),	Sycamore ( <i>Acer pseudo-platanus</i> )

**Farm Crops.**—The leading grains in England are wheat, barley and oats. Nine-tenths of the wheat is grown in the eastern counties, where the summers are always dry and hot enough to secure its ripening. Oats can be raised where damper and cooler climatic conditions prevail. Barley is grown in all parts, but principally in the wheat districts of the east.

*Turnips* and *potatoes* are cultivated almost everywhere, the former especially in the barley-growing districts. *Peas*, *beans*, and *clover* are widely cultivated.

*Hops* are produced in Kent, Sussex, Hereford, Surrey, Worcestershire, and Hampshire.

Prior to the eighteenth century, little advance had been

made from the most primitive methods of culture. The chief improvements since that time have been the gradual adoption of better systems of rotation of crops; the improvement of the live stock, commenced by Bakewell about 1760; the introduction of turnip and barley culture and the use of lime commenced about 1765. The Swedish turnip was introduced about 1790, and spring wheat about 1795. Mangel-wurzel and other improved plants, with improved breeds of animals, have contributed to increase the products of agriculture; as the enclosing of common lands and wastes and the draining of mosses and marshes have contributed to increase the produce and healthiness of the general surface of the country.

It is only in the valleys and near the sea coast that wheat can be successfully grown in *Wales*, but the higher lands afford crops of oats, barley, and a short hay which is eaten by the hardy Welsh cattle.

**Fruit Trees.**—*Apple and pear orchards* are found almost all over the country; but more especially in the West of England, on the red sandstone soils of Devonshire, Somersetshire, Gloucestershire, Herefordshire, and Worcestershire. *Cherry gardens* are frequent on the chalk soils of Kent. *Currant and gooseberry gardens* are found universally.

**Domestic Animals.**—The domestic animals of England are the best in the world. **Horses** of many breeds are found in the country. The draught horses are remarkable for their bulk, fine condition, and great strength. The large *dray-horse*, so well fitted for drawing heavy loads, which is believed to have been introduced from the Low Countries, is bred in some of the midland counties. Yorkshire is noted for its carriage horses—the *Cleveland bays*; and the farm breed of *Suffolk* is an excellent one. *Welsh horses* are heavy-headed and thick-shouldered, but strong, hardy, and uncommonly gentle. The mountain ponies which are reared in Wales are much sought after in England.

The **Cattle** may be divided into the long-horned, short-horned, and polled, or hornless breeds. *Long-horned cattle* are met with in Lancashire; while the cattle of Holderness, Northumberland, Durham, North Devon and Sussex are all *short-horned*. The *Suffold* duns and the *Norfolk polls* are two well-known races of hornless cattle. The *Short-horns*, or *Durhams*, perhaps outnumber all other kinds, and the

*Herefords* with longer horns are a well-known breed of cattle.

The rearing of black cattle is one of the most profitable parts of the farmers' work in Wales; and by the sale of these they are chiefly enabled to pay their rent.

Sheep are divided into the long-woolled and the short-woolled kinds; the latter yield the better mutton, the former supply the greater weight of wool. The Romney Marsh, Lincoln, and Leicester breeds are *long-woolled sheep*; while the South Down, Dorset, Wiltshire, and Hereford sheep have *short wool*. Norfolk and South Down sheep are remarkable for their black faces and legs. Races of small sheep are fed in the hilly and mountainous districts of the west, and the mutton of such sheep is highly prized. Welsh, Exmoor, and Dartmoor mutton is much sought in London.

Pigs are fattened on most farms. The larger kinds are those of Hampshire, Berkshire, Gloucestershire, and Herefordshire; but the smaller breeds of Suffolk and Essex are highly prized. The black pigs of Berkshire and the red ones of Tamworth are two much improved varieties of porkers.

**Fisheries.**—The Fisheries of Britain are very important. It is stated that about seventy thousand people are engaged in this industry, and that fish to the value of twenty millions sterling is sent to British markets annually, in addition to our exports. The great central fish market of all England is London; and not only many English counties, but some continental countries obtain more or less of their supply from Billingsgate, the chief fish market of that city. The North Atlantic Ocean is richer, in both the quantity and the quality of its edible fish, than any other portion of the waters of the globe; and of the whole North Atlantic the North Sea is one of the richest parts. It abounds in shoals and banks, the resorts of fish. The chief of these fishing grounds will here be mentioned.

The *Goodwin Sands*, off the coast of Kent, provide a lurking-place for fish of which the hardy boatmen of Deal and Ramsgate are not slow to take advantage. Off the coast of Norfolk are the celebrated *Yarmouth Sandbanks*. Further to the north is the extensive *Dogger Bank*, stretching across the North Sea; beginning about twelve miles from Flamborough Head, and extending about two hundred miles towards the



coast of Jutland. Between the Dogger and the *Well Bank*, to the south, are the *Silver Pits*, which supply soles in great numbers. To the north-east of the Dogger Bank is the *Horn Reef*, a narrow strip extending to Jutland. The *Berwick* and *Mar Banks* begin opposite to Berwick, but are not very large. Further to the east, extend the *Long Forties* of great extent.

The larger class of trawlers, sailing from the ports on the North Sea, engage in very protracted cruises, remaining at sea for six, eight, ten, or even twelve weeks at a time, extending their operations from the island of Texel to Heligoland, and even northward of the Horn Reef, to the waters of Iceland. The fish caught are taken to Billingsgate, Grimsby or Hull in swift steamers, known as "carriers." In the winter, many of the North Sea trawlers work on the Dogger Bank and nearer grounds, conveying their own catches to port from day to day.

The English Channel "trawling-grounds" are more restricted in their area than those of the North Sea, and are at a lesser distance from the coast, so that the boats can run to port with their fish daily. The principal trawling ports are *Brixham* and *Plymouth*, on the English Channel; and *Grimsby*, *Yarmouth*, *Harwich*, and *Ramsgate*, on the North Sea.

The trawlers supply the London and country markets with *turbot*, *brill*, *soles*, *plaice*, *haddock*, and other kinds of fish. Line fishing is extensively carried on for the capture of *cod*, *ling*, *haddock*, and *whiting*, the hooked fish fetching a higher price than those taken in the trawl-net.

Second only in importance to the trawl is the drift net fishing, although it is confined to the pursuit of the herring, mackerel, and pilchard. The majority of the herrings captured off the coast of Norfolk by the Yarmouth and Lowestoft fishermen, are converted into bloaters. There is also a considerable herring fishery carried on off *Hastings* and the coasts of Devon and Cornwall, most of the fish being sold fresh. The Isle of Man herring fishery is an important one.

Our chief river fishes of commercial importance are the *salmon* and *trout*, which are conveyed to London and other large towns from the salmon streams of the north and west; the most important salmon rivers being the *Avon*, *Axe*, *Conway*, *Coquet*, *Dart*, *Dee*, *Derwent* (Cumberland), *Eden*, *Exe*, *Fowey*,

*Lune, Ribble, Severn, Stour, Taff, Taw, Teify, Torridge, Towy, and Usk.*

Sprats are largely caught at the mouth of the Thames and off the Goodwin Sands, the two fishing ports being *Leigh*, in Essex, and *Deal*, in Kent.

The Pilchard fishery is almost wholly confined to the coast of *Cornwall*.

"Shell Fish."—Of crustaceans and molluscs used as food, lobsters, crabs, prawns, oysters, mussels, and whelks are the most important.

Lobsters are found on many rocky shores, as, for example, around the *Orkney* and *Shetland* Isles, on the reefs round *Jersey*, and off the coasts of *Devon* and *Cornwall*.

Prawns are to be had on the coasts of *Kent* and *Sussex*, from *Deal* westward, and the *Channel Isles* are noted for them.

Oyster Farming.—The largest supply of oysters, in this country at least, is derived, not from natural, but from artificial beds. The trade in oysters now ranks in importance with the herring and mackerel fisheries, and oyster farms have been established with success in the Thames estuary and elsewhere.

*Burnham-on-Crouch* and *Colchester*, in Essex, and *Faversham*, *Milton*, and *Whitstable*, in Kent, are famous for oysters; while *Great Grimsby*, in Lincolnshire, and *King's Lynn*, in Norfolk, are noted for whelks.

## CHAPTER VIII.

### SCOTLAND.

**General Remarks.**—Scotland occupies the northern part of the island of Great Britain; but, although merely divided from England by a range of low hills—the *Cheviots*—two small rivers—the *Tweed* and *Esk*—and a very shallow arm of the sea—the *Solway Firth*—it is, for the most part, very unlike England. Mountain chains of ancient rocks, in many instances bare, or only partly clothed in vegetation, form a large portion of the surface of Scotland. Many long inlets of the sea, penetrating far into the land, render the outline of the coast extremely irregular. Lakes, embosomed in the hills, with clear and copious, but rapid rivers, pouring along the valleys, help to complete the picture which a native poet has embodied in two short lines:—

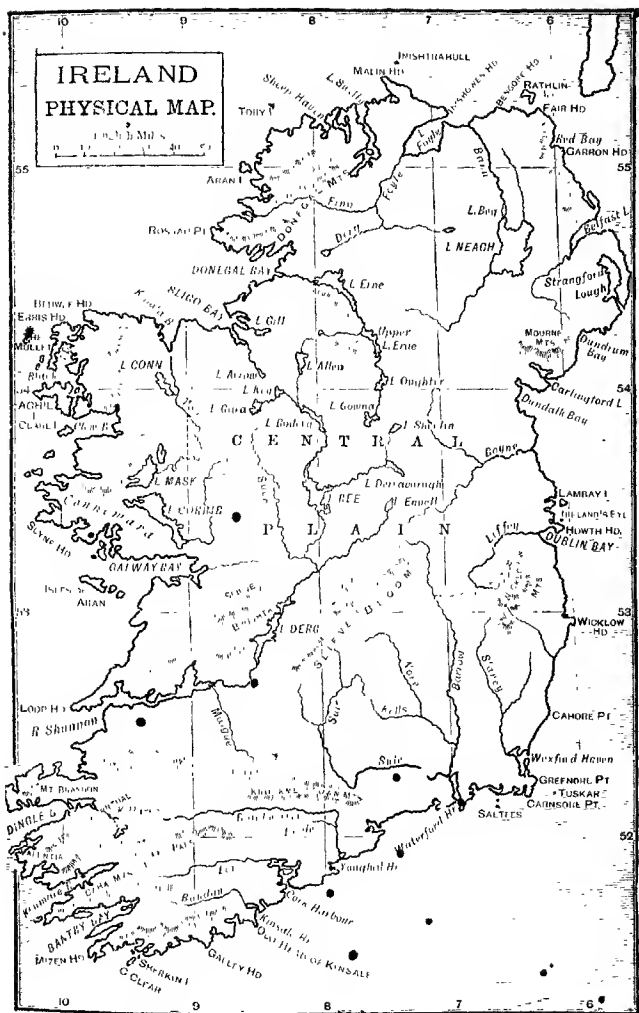
“ *Land of brown heath and shaggy wood,  
Land of the mountain and the flood.*”

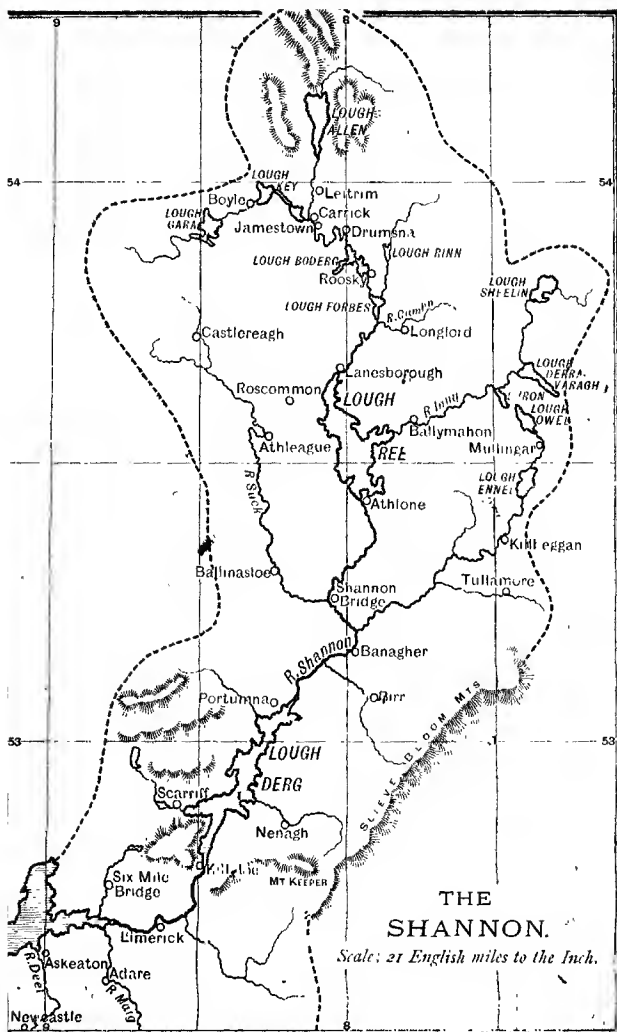
The *arable land* of Scotland, which covers no more than a third of the whole surface, chiefly lies in broad valleys sloping towards the sea coast, known as *glens*<sup>1</sup> and *dales*.<sup>2</sup> The less steep hilly districts are chiefly sheep-walks and cattle-pastures. Timber, which once covered a large portion of the surface, is now chiefly confined to the neighbourhood of gentlemen's and noblemen's dwellings, and to plantations which have been raised within the last hundred years to protect arable lands from the cold winds.

To the north of a curved line drawn between Glasgow and Aberdeen, the country is more mountainous than elsewhere, and is therefore called the *Highlands*. This is a district full of romantic scenery, consisting of rugged, gloomy mountains, lonely lakes, rushing streams, and wild, natural woods. Its population, of Celtic and Scandinavian descent, exhibits many peculiar features of language, dress, and manners, which, however, are rapidly dying out.

<sup>1</sup> *Glen*, Gaelic, means a narrow valley.

<sup>2</sup> *Dale*, Teutonic, means a valley.





To the south of an irregular line from Glasgow to Ayr are the *Southern Uplands*. They are not nearly so high as the Highlands, the highest point being 2,700 ft. above the sea, and are deeply cut into by the Tweed, Till, upper Clyde, Annan, and other rivers. Most of the country is given up to sheep-farming; and woollen manufactures are carried on in the towns and villages in the valleys.

The remainder of the country, termed the *Lowlands*, contains less high ground, although there are several ranges of hills of a considerable height. The inhabitants of this district are, like the English, a Teutonic people, with some admixture of Celtic blood; and their language is merely a dialect of English.

Connected with Scotland are two large groups of islands; the northern group includes the *Orkney* and *Shetland* Islands; while the western group comprises the Inner and Outer *Hebrides*.

**Mountains.**—The Highlands may be considered as one mass of mountains cut into two sections by the deep Glenmore; but those bordering on the Lowlands, and extending from Oban to Aberdeen, are known as the *Grampians*. The most noted *Highland peaks* are Ben<sup>1</sup> Attow, 4,000 feet; Ben Dearg, 3,600 feet; Ben Wyvis, 3,400 feet; and Ben More, 3,200 feet.

The chief *heights of the Grampians* are Ben Nevis, 4,400 feet, the loftiest mountain in Britain; Ben Macdhuì, 4,300 feet; Cairntoul, 4,200 feet; Cairngorm,<sup>2</sup> 4,100 feet; and Ben Lawers, 4,000 feet.

The principal *ranges in the Lowlands* are:—

1. The Sidlaw Hills, in Forfar;
2. The Campsie Hills, in Stirling;
3. The Ochil Hills, in Fife.

In the *Southern Uplands* are:—

1. The Pentland Hills, in Midlothian;
2. The Lammermuir Hills, between Berwick and Haddington;

<sup>1</sup> *Ben*, Gaelic, means a mountain. Thus, *Ben Attow* means rush mountain; *Ben Dearg*, red mountain; *Ben Macdhuì*, black swine mountain; *Ben More*, great mountain; *Ben Nevis*, snowy mountain; *Ben Wyvis*, mountain of terror.

<sup>2</sup> *Cairngorm* means blue mountain, from *cairn*, a stony hill and *gorm*, blue. *Cairntoul* means the hill of holes.

3. The Cheviot Hills, on the border ; and

4. A long range, bearing no general name, extending through the counties of Selkirk, Peebles, Dumfries, Ayr, Lanark, and Kirkcudbright, including the Lowther or Lead Hills.

**Rivers.**—Of the numerous rivers of Scotland, the *Tay* is the largest, and the *Spey* the most rapid. Scarcely any of them are navigable to any considerable distance from the sea ; and except the lower courses of the Clyde, Forth, Tay, and Dee, none of them are important commercially except as salmon rivers.

Glasgow and Greenock are on the *Clyde* ;

Leith, Kirkcaldy, and Bo'ness<sup>1</sup> are on the estuary of the *Forth* ;

*Dundee* is on the estuary of the *Tay* ;

*Aberdeen* is at the mouth of the *Dee*.

**Lakes.**—Most of the lakes of Scotland occupy the long and deep valleys excavated by the moving ice of the Glacial Age, and are called lochs. The chief of these are :—

Lomond, 45 square miles, between Stirling and Dumbarton ;

Awe, 30 square miles, in Argyll ;

Ness, 30 square miles, in Inverness ;

Shin, 25 square miles, in Sutherland ;

Maree, 24 square miles, in Ross ;

Tay, 20 square miles, in Perth.

Lochs Lochy and Ness are united by the *Caledonian Canal*, which joins Loch Linnhe at Fort William, and Loch Beaully at Inverness. Through this artificial waterway ships of fifteen hundred tons can pass direct from the Atlantic Ocean to the North Sea.

**Geological Structure.**—In the Highlands the rocks are generally very old and very hard, such as granite, gneiss, mica-slate, and the like. The granite generally rises into lofty peaks, on which, in many instances, gneiss, and other hard metamorphic rocks abut or rest. In the Lowlands, the rocks belonging to the older stratified formations are covered with coal measures, volcanic rocks, and Old Red Sandstone. Stratified rocks, more recent than Old Red Sandstone, occur only in a very few places, and in very limited areas.

<sup>1</sup> Bo'ness is the usual abbreviation for the port of Borrowstounness.

**Metals and Minerals.**—The Coal-field of Scotland extends, with slight interruptions, across the Lowlands, from Fife Ness to Girvan, in Ayr; the principal beds being near Dysart and Alloa; in the vale of the Esk, near Edinburgh; near the line of the Forth and Clyde Canal; at Paisley, in Renfrewshire; at Dalry, Kilmarnock and Girvan, in Ayrshire; and in Fifeshire.

**Granite** is quarried in the neighbourhood of Aberdeen, at Kirkcudbright, and in Argyll, for building and paving purposes. The city of Aberdeen itself is chiefly constructed of it; and great quantities are sent to London, Liverpool, and other places, to be employed in building bridges, docks, and other structures, in which unusual durability is a first consideration.

**Slates** of excellent quality, for roofing, are quarried in Argyllshire. *Sandstone slabs*, for paving, are obtained in Caithness and Lanark, and also at Arbroath, in Forfar. A fine kind of sandstone is quarried in many places; and, owing to the abundance of both sandstone and trap, both of which are well adapted for building purposes, little brick is used in Scotland.

The chief **metals** worked in Scotland are iron and lead. *Iron* is worked to a great extent in the counties of *Lanark*, *Renfrew*, and *Ayr*. *Lead* is wrought in the *Lowther Hills*, between Lanark and Dumfries.

**Soils.**—The soils of Scotland are very diverse in character. On the comparatively level tracts, much is composed of loam, resting on clay, or of diluvium, or of alluvial clay washed down from the hills. Much level, as well as hilly ground, is also covered by peat bogs, the remains of ancient forests. On the hills of volcanic rock, in Renfrew, Lanark, Dumbarton, Stirling, Fife, Perth, and Forfar, a light and very fertile soil is usually found. The Lowland Plains, especially Strathmore, the Carse<sup>1</sup> of Gowrie, and the Lothians, as well as "the Dales"—Clydesdale, Tweeddale, Anhandale, and others, are very fertile.

**Climate.**—The climate of Scotland, as compared with that of England, is cold, cloudy, and damp; although the temperature is not, as a rule, so extreme as that of south-eastern England, seldom falling below 25 degrees Fahrenheit, or rising

<sup>1</sup> Low and productive land generally near a river.



above 65 degrees, the annual average being from 45 to 47 degrees. However, the summer is uncertain, and often includes several consecutive weeks of unsettled weather; but, on the other hand, the winters are rarely severe, except among the mountains, and often include many agreeable days, or even weeks. The backward spring is the worst feature of the climate of Scotland.

**Vegetable Productions.**—Scotland was originally covered to a great extent by woodlands, but these were permitted to decay until, in the last century, the country had become nearly bare of trees, the only patches being round the seats of the nobility and gentry. Within the last hundred years this state of things has been greatly changed, and extensive plantations have been formed in many districts to shelter the cultivated lands. These plantations consist chiefly of *larch* and *fir*; but the country also produces oak, ash, and elm in abundance.

Owing to the mountainous nature of the country, only about one-third of the soil is fit for cultivation; and of this only one-half is arable land, the remainder being in pasture.

**Farming** was in a very bad state in Scotland until the middle of the eighteenth century. The Highlands, it is true, produced herds of the native small black cattle; and in the Lowlands, the higher grounds were occupied, as now, by flocks of sheep; but there was little arable land, and that little was ill-cultivated and comparatively unproductive.

Since that time, the arable land of Scotland has been converted into farms for the advancement of agricultural science and practice in all its forms.

1. The growing of turnips for the winter feeding of cattle has been in itself a remarkable improvement.

2. Suitable rotations of crops have been followed, and this movement has been attended with much success.

3. Old, cumbrous, and withal expensive modes of tillage have been superseded by the light plough and cart.

4. Draining has improved both the soil and the climate.

5. Lime and bone manure have been extensively applied.

*Oats*, a hardy cereal, are still the chief grain of Scotland and oatmeal is yet one of the chief foods consumed by the hardy Scottish peasantry and working people, as well as by children of all classes. *Barley* forms a conspicuous article

in the food of the common people, and is used largely in distillation. *Wheat* will not flourish further north than the Firth of Forth, except in very sheltered spots; and in the latitude of Aberdeen it will not ripen at all except at or near sea level. Dornoch Firth must be considered the northern limit of successful wheat culture. *Potatoes* are raised in open fields to a great extent in Scotland, and are an important article of food, beside supplying splendid seed.

**Wild Animals.**—Scotland formerly abounded in wild animals, particularly the *wild boar*, the *wild ox*, and the *wolf*. The wild boar has been extinct for ages; and the wolf has disappeared since the latter part of the seventeenth century. Of the primitive white wild cattle of the country, a herd is preserved, as a curiosity, in the park of the Duke of Hamilton. *Hares* and *rabbits* everywhere abound, and *foxes* are not scarce.

Of birds of prey, the *eagle*, *falcon*, and *owl*, are still found in the Highlands and the Hebrides, where also *deer* and wild game are abundant. Sea birds haunt the lofty and precipitous shores in vast numbers, their down and feathers constituting an article of commerce.

**Domestic Animals.**—The Lowland hills continue, as formerly, to be covered by extensive flocks, and sheep-farming has also been introduced into the Highlands. Although this change has extinguished the old cottier system, which came down from feudal times, *black cattle* are reared in as great numbers as ever. The Shetland Islands are noted for a breed of small ponies, much used in mines, and also a race of sheep, with very fine wool. On the Cheviot Hills roam a breed of sheep, called Cheviots; and Clydesdale has a breed of noted draught horses.

**Fisheries.**—In Scotland, herrings are cured under the supervision of the Board of British White Herring Fishery, which brands the barrels with a certain mark, generally accepted in the markets as a guarantee of the quality of the contents. Nearly all the branded herrings used to be sent abroad, but the circumstances of the war led to most of the produce being consumed at home.

Scotland is the great home of the drift fishery for herrings, exporting in 1913 a million barrels of cured herrings annually to Germany, Russia, Ireland, Holland, and other countries.

Herrings are found all round the coast, but especially from July to September on the western shores of the Orkneys and Shetlands; on the Long Forties, off the coast of Aberdeen; to the east of the Hebrides; and in the Firth of Clyde. The principal ports engaged in this industry are Wick, Berwick, Fraserburgh, Peterhead, Aberdeen, Stornoway and Thurso. Salmon are caught in the Tweed, Tay, Don, Spey, and other rivers.

## CHAPTER IX.

### IRELAND.

**General Remarks.**—Ireland, the Emerald Isle, is divided from Great Britain by the narrow seas called the St. George's Channel, the Irish Sea, and the North Channel. Of a more compact form than Great Britain, it is nevertheless penetrated by a considerable number of deep gulfs, bays, and estuaries, especially on the West, which give it on the whole an irregular outline. In spite of this advantage for trade and fisheries, Ireland has no foreign trade to speak of.

**Mountains.**—The largest mountain masses of Ireland are generally those farthest from the centre, where are the largest stretches of almost level country in the British Isles.

The *Mourne Mountains* of County Down end with *Slieve Donard*. The *Slieve Bloom Mountains*, nearly in the centre of the island, run north and south. In this range, sometimes called the *Heights of Ireland*, the rivers Nore, Barrow, and Suir, commonly called by the country people the Three Sisters, take their rise. In Connaught there is a fine range of mountains, of which the *Twelve Pins* form a part; and, in Munster, a ridge of varying height extends from Dungarvan, in the county of Waterford, across the kingdom, into the county of Kerry.

The highest mountain in Ireland, *Carran Tual*, at Killarney, is 3,400 feet above the level of the sea. *Mount Neplin*, 2,640 feet, and *Croagh Patrick*, 2,500 feet, are two conspicuous heights in Mayo.

The Mourne, Wicklow, Connemara, Donegal, and Nephin Beg mountains are composed chiefly of granite. The mountains of Kerry, Cork, and Waterford are mostly of Old Red Sandstone; and the mountains of the Central Plain are all flanked with Old Red Sandstone and conglomerate.

Some of the counties of Ireland, although possessing a varied surface, can boast only of hills. Such are Armagh,

<sup>1</sup> *Slieve*, Irish *sliev*, a mountain. The term is applied to a mountain which forms part of a range.

Monaghan, Cavan, and Louth. Others, as Meath, Kildare, Longford, and Galway, are very level. A peculiarity of the hilly and level parts of Ireland is their generally green aspect, which arises from their fertile soil and moist and equable climate. It has led to its being described as the "Emerald Isle," and the "Green Isle of the Ocean," names sung by the poets of Ireland and repeated with affection by Irishmen in all parts of the world.

**Bogs.**—In the lower parts of Ireland, there are various extensive bogs which detract from the beauty of the scenery, and are only useful for supplying fuel to the inhabitants. The largest of these is the *Bog of Allen*, which stretches, a vast plain, across the centre of the island, or over a large portion of Kildare, King's County, and Queen's County. In this bog the beautiful River Boyne rises, flowing thence, to the north-east, to join the sea at Drogheda. Much of the Bog of Allen has been drained and brought into cultivation; and there is good reason to believe that the whole of it could be reclaimed.

Along the banks of the River Inny, which rising in Lough Iron, in the county of Westmeath, crosses Longford, and falls into the Shannon, are large tracts of deep wet bog, only exceeded in dreariness by that which, for miles, skirts the Shannon, in its course through Longford, Roscommon, and King's County. All these bogs might be reclaimed could they be drained; but that cannot be accomplished while the Inny and the Shannon are kept up to their present level by the numerous weirs which interrupt their courses. There are also many tracts of bog in the western counties, and numerous detached bogs both in Ulster and Munster; but none of such extent as those mentioned above.

Notwithstanding the quantity of water which these bogs retain, there arise from them no exhalations injurious to health. This is due to the large amount of tannin they contain, which possesses so strong an antiseptic quality that dead bodies plunged into a deep bog do not decay, but are preserved like Egyptian mummies.

Ireland is described as a thickly wooded country, not only by her own writers, but also by those Englishmen who have given any account of the country. They mention the forests in which the Irish rebels took refuge; and all the scenery of

Spenser's "*Faerie Qucene*" is drawn from the River Bandon, which he describes as

"*The pleasant Bandon, wood y-crowned,*"

as it is to this day. Wherever Cromwell's soldiers came, they felled the forests, so as to destroy the refuges of the rebels.

In most cases the bogs bear evidence to the truth of the statements concerning the woodlands of Ireland. Some supply large quantities of the remains of fir trees, which burn with a pleasant aromatic smell, and a flame so brilliant that it is often used in place of candles. In other bogs only oak is dug up; in others, again, yew of large size is found.

**Rivers.**—Ireland has many fine rivers, several of which expand to form lakes at various points in their course, and fall into the sea at the heads of spacious estuaries, which are in every way suitable for commerce. The *Foyle* and the *Bann* fall into the sea to the north of Ireland. The *Boyne*, *Lifey*, and *Slaney* empty themselves into the seas which lie between Ireland and England. The *Barrow* and the *Nore*, uniting with the *Suir*, pour their combined streams into Waterford Harbour. The waters of the *Blackwater* and *Lee* escape into the ocean at Youghal and Cork respectively. The *Shannon*, *Moy*, and *Erne* flow directly into the Atlantic Ocean off the west coast of Ireland.

**Lakes.**—Among inland lakes, or loughs as they are here called, the largest is *Lough Neagh*, in Ulster, which exceeds in size any other lake in the United Kingdom; its length being about twenty miles, and its breadth from ten to twelve.

The next largest lake is *Lough Erne*, which is long and narrow, having its surface adorned by many islands. Loughs *Melvin* and *Gill* are the most interesting lakes in Leitrim; and in the west of Connaught, Loughs *Conn*, *Mask*, and *Corrib* are fine sheets of water.

There are three large expansions of the Shannon—Loughs *Allen*, *Ree*, and *Dearg*. There are about thirty pools in the mountain glens of county Clare; and Kerry is celebrated for the lovely lakes of *Killarney*. The noted lakes of *Glendalough* are numbered among the ten pools of County Wicklow; and Westmeath is a region of water.

**Geological Structure.**—Ireland stretches westward into the Atlantic, and is indented by deep gulfs protected by jutting promontories, which have hitherto withstood the force of the boisterous ocean to which they are exposed. The rocks which form the inner parts of these Gulfs are generally composed of Carboniferous Limestone, while the projecting promontories are made of harder rocks, such as granite, mica-slate, quartz rock, or Old Red Sandstone conglomerates.

In Ireland, the coast is mostly mountainous, and the interior flat. Thus, we find the Mountains of Antrim on the east coast; those of Derry and Donegal on the north-west coast; those of Sligo and Kerry on the west and south-west. The slate districts of Cork and Waterford form the south and south-east coasts; while the Mountains of Wicklow and the still higher Mourne Mountains are situated near the eastern coast.

The interior of the island is, generally speaking, flat or gently swelling ground, much of it covered with clay, and causing the well-known Irish bogs, which frequently give rise to rivers. Those rivers whose courses lie across the Central Plain are generally sluggish and at intervals widen into shallow lakes in the case of the Shannon and Erne.

A vast tract of limestone extends in an almost unbroken line from the northern boundary of County Cork to a point beyond the southern boundary of Ulster. This is intermixed with slates and granite in Down, Armagh, and Wicklow.

The southern coast is composed of limestone, conglomerate, and slates of various colours, which may be distinctly seen along the shores of Cork and Waterford. The South-Western Highlands are composed of Old Red Sandstone, while the land round the estuary of the Shannon is mainly millstone grit, with a few small areas of coal measures. There are also in Galway, Mayo, and Sligo, tracts of slate, quartz rock, yellow sandstone, and conglomerate. The counties of Donegal and Derry are chiefly composed of mica-slate, with an intermixture, in the north-western part of Donegal, of granite; while the county of Antrim is mainly composed of basalt.

**Metals and Minerals.**—The counties in which anthracite coal is worked are Carlow, Kilkenny (*Castle Comer Coal-field*), and Tipperary (*Killenaule Coal-field*). Bituminous coal is worked

in Donegal, Derry, and Tyrone, but not as thoroughly as it should be.<sup>1</sup>

Ireland is not rich in useful metals, although a little copper and lead-silver ore are found in the Wicklow Hills, and small quantities of hematite iron ore are dug in the north of Ireland and exported to Scotland to be smelted. The deposit from which this ore is obtained consists of small grains of very rich ore about the size of a pea or bean. The production of coal and iron in Ireland is only about one per cent. of that of Great Britain.

The quarries of Ireland produce a variety of beautiful limestones, as the black marbles of Kilkenny, the green of Galway, and the variegated ones of Fermanagh. The quarries of Killaloe and Valentia afford large-sized excellent slates, and an almost inexhaustible supply of granite is found in the hills to the south of Dublin.

**Climate.**—As scarcely any part of Ireland is more than fifty miles from the sea, the climate is mild, equable, and moist. The equable nature of the climate is proved by the fact that delicate plants thrive in the county of Donegal. The southern part of Ireland is considerably warmer than Ulster, and snow seldom lies upon the ground for any considerable time. Spring is earlier, fruit ripens a fortnight sooner, and the corn is ready for harvesting a month before that of Ulster.

The moisture of the climate is its greatest defect; but this varies remarkably in degree. The atmosphere of the western side of Ireland is much more moist than that of the eastern, exposed as it is to the influence of the moist winds from the great Atlantic, which, forced upward by the mountains, deposit a great portion of their moisture in this region.

**Vegetable Productions.**—The vegetable productions of Ireland in general resemble those of Great Britain. The climate is well suited to the production of oats, which form seven-eighths of the total grain crop, the bulk of the remainder being barley, though wheat cultivation is increasing. There are some plants peculiar to the flora of Ireland, the more remarkable of which will now be mentioned.

The strawberry tree (*Arbutus unedo*), found at Killarney,

<sup>1</sup> The value of the coal raised in Ireland in 1909 was  $\frac{1}{2500}$  of the total output of the United Kingdom.



the Irish rose (*Rosa Hibernica*), found near Belfast, the Irish yew (*Taxus Hibernica*), and some other plants are peculiar to the Emerald Isle.

Owing to the equability of the climate, arbutus, laurestinus, and myrtle grow luxuriantly even in the north of Ireland. In Cork and Kerry, tender shrubs, such as bay, verbenas, and fuchsias, flourish with extraordinary luxuriance.

**Domestic Animals.**—There were formerly many races of cattle considered exclusively Irish, of which two kinds are still extant; the *Kerry* breed, which is black, small, and beautifully proportioned; and the *old Irish* breed, which is usually of a bright red colour, very deficient in beauty, but very valuable for the dairy. The other useful animals are like those of the sister island.

**Wild Animals.**—*Red deer*, although scarce, are still to be found among the woods of Killarney, and in some of the mountain districts of Kerry, Cork, Tipperary, and Donegal. It is generally believed that there are no reptiles in Ireland, and this is true. With this exception, the fauna is identical with that of Great Britain.

**Fisheries.**—If the herring fishery were prosecuted off the Irish coasts with anything like the energy of the Scottish fishermen, it is probable that it would prove highly remunerative to those engaged in it; but, as the fish could not be brought to Britain while fresh, curing stations would have to be established, and the fish prepared for foreign markets. A great pilchard fishery might also be established on the south coast. The salmon fisheries of Ireland yield as much as half a million sterling annually.

## CHAPTER X.

### MANUFACTURES OF THE UNITED KINGDOM.

**Blankets.**—Blankets are made at Dewsbury and Wakefield in the West Riding of Yorkshire; and at Witney, in Oxfordshire.

**Boots and Shoes.**—The practice, which formerly prevailed, of making boots and shoes to order, by single workmen at their own homes, is now exceptional. Boots, shoes, slippers, and their parts, are now manufactured in enormous numbers by machinery at huge shoe factories, and are sold through wholesale houses. Even those tradesmen who still make boots and shoes at home, usually purchase the uppers ready-made from wholesale houses, and merely stitch or peg on the soles in their own workshops. As in the case of other artisans, the shoemaker of olden time has had to succumb to machinery, notwithstanding the many efforts made by the workmen to oppose its introduction.

Northampton, Stafford, Leicester, Leeds, Nottingham, Norwich, and London are the principal towns in which shoe manufacturing is carried on in this country. Many of the so-called French boots are made by English manufacturers with fronts imported from France; and there exists also an import of French boots.

The value of the boots and shoes exported, together with other leather goods, amounts to nearly four millions annually; and they are distributed in order of value to British South Africa, Australasia, British West Indies, British India, Holland and Brazil<sup>1</sup>

**Breweries.**—The character of the water employed in brewing beer has much to do with the quality of the product. London porter, Dublin stout, and the ales of Burton-on-Trent are examples of this. The best beer is produced from water containing a considerable amount of salt, gypsum, and chalk, and such as is free from organic matter.

Our export trade in ale and beer amounts to one and three-quarter millions sterling annually; our principal customers, with the single exception of the United States, being members

<sup>1</sup> In 1918 the value was only £117,000

of the British Empire. They are in order of value, Australia, India, the United States, South Africa, Malta, British West Indies, and Egypt.

**Cabinet Making.**—Cabinet making is the general term applied to household furniture made of wood. The great seats of the cabinet making trade are *Shoreditch* and *Hoxton*, in London; but chairs are made at *High Wycombe*, in Buckinghamshire.

**Carpets.**—The principal kinds of carpets made in the United Kingdom are Axminster, Brussels, Dutch, Felt, Kidderminster, Tapestry, Velvet Pile, Venetian, and Wilton, which are chiefly made at Halifax, in the West Riding of Yorkshire, at Rochdale, and at Kilmarnock and Dundee, in Scotland.

**Axminster Carpets**, which derive their name from Axminster, in Devonshire, where they were first made, are expensive, as, like Turkey carpets, the coloured worsted is tied to the warp in tufts. Each carpet is made in one piece.

**Brussels Carpets** are made chiefly at Kidderminster, and also in the West Riding of Yorkshire.

**Dutch Carpets**, sometimes called string carpets, because dyed hemp enters into their composition, are woven on ordinary looms.

**Printed Felt Carpets** are made of coarse wool and hair, upon which the pattern is printed.

**Kidderminster, or Scotch Carpets**, present the same pattern on both sides, with the colours reversed.

**Tapestry Carpets** are made of one yarn dyed different colours at different parts of its length.

**Wilton Carpets** have the loops of yarn cut so as to present a velvet-like surface.

**Indian and Turkey Carpets** are imported, but imitations are made in this country. A Turkey carpet has no admixture of green, the sacred colour of the Mahomedans.

The carpets known as *Brussels* are chiefly made at *Kidderminster*, in Worcestershire, while the so-called Kidderminster carpets are manufactured at *Halifax*, in the West Riding of Yorkshire, at *Rochdale*, in Lancashire, and in Scotland.

**Cheese.**—Although many cheeses are annually made in this country, the import is still very large, amounting to about sixteen millions sterling annually. Cream cheeses are soft, and will only keep a short time; Stilton is an intermediate

quality; but Cheshire, Gloucester, and Cheddar cheeses are hard, and intended for long keeping. Continental cheeses—Gorgonzola, Camembert, and others—find a ready sale in the large towns.

**Cider.**—In England, cider is chiefly made in the *Herefordshire* district, and in *Devonshire*, where it is much used as a beverage.

**Clocks and Watches.**—In England, this branch of manufacture is chiefly confined to London, Birmingham, Coventry, and Prescott. Clerkenwell is the headquarters of the trade in London. Watch movements are made in Prescott, and other places in Lancashire; the London workmen make the other parts and put them all together. Thus, a Clerkenwell watchmaker buys his movements from Lancashire, and employs tradesmen to complete the watch; these being not merely workmen, but small master tradesmen. The work of making a London watch is very much subdivided, and each one may pass through more than one hundred hands, even after the movements have been made in Lancashire.

Swiss watches have long been noted for beauty of workmanship and cheapness of production. Recently a great number of American watches, the movements of which are made by machinery, have come into the English market. We import annually watches and parts of watches amounting to nearly a million sterling.

**Cooperage.**—Cooperage, or the making of barrels and casks, is largely carried on in *London*, *Burton-on-Trent*, and in all towns where there are many breweries or distilleries. Five kinds of oak are employed in this industry, namely, Quebec, Virginia, Dantzic, Hambro', and English.

**Copper Smelting.**—The principal seat of copper smelting in Great Britain is at *Swansea*, in South Wales, which, excluding the United States, smelts half the world's supply of copper ore. The chief supplies of ore, which is sometimes more or less prepared, are from Chile, South Africa (mostly from the Cape of Good Hope), Spain, and Queensland. Most of the ores contain copper and iron, in combination with sulphur and arsenic; the Chile ores often contain a large quantity of silver.

**Cotton.**—As early as the year 1641, Manchester began to be noted as a town where cotton was manufactured; but before

the invention of machinery and the rise of the factory system, the cotton manufacture of England was of little importance. The weavers, dispersed in cottages throughout the district, purchased the cotton with which they worked. Having spun it and woven the cloth, they took their goods to market and sold them on their own account.

Sea-island and long stapled Egyptian cotton are the varieties from which the finer kinds of yarn are spun; and, from them, muslins and laces are made. Cambrics, shirtings, and calicoes are made from Brazilian and the better classes of American cotton. Coarse yarns, used for making fustians and other heavy fabrics, are spun from the inferior qualities of America and Surat. From wets of wool and worsted and warps of cotton several varieties of Colburg and Orleans cloth, mousselines-de-laine, damasks, and similar fabrics are made. Yorkshire broadcloths are, some of them, quite half cotton; and fabrics are also made of flax and cotton, silk and cotton, and so on.

Raw cotton to the value of one hundred and fifty millions sterling was imported into the United Kingdom in 1918,<sup>1</sup> chiefly from America, Egypt, and India. Of the entire amount of cotton yarn manufactured in this country one-fourth is exported.

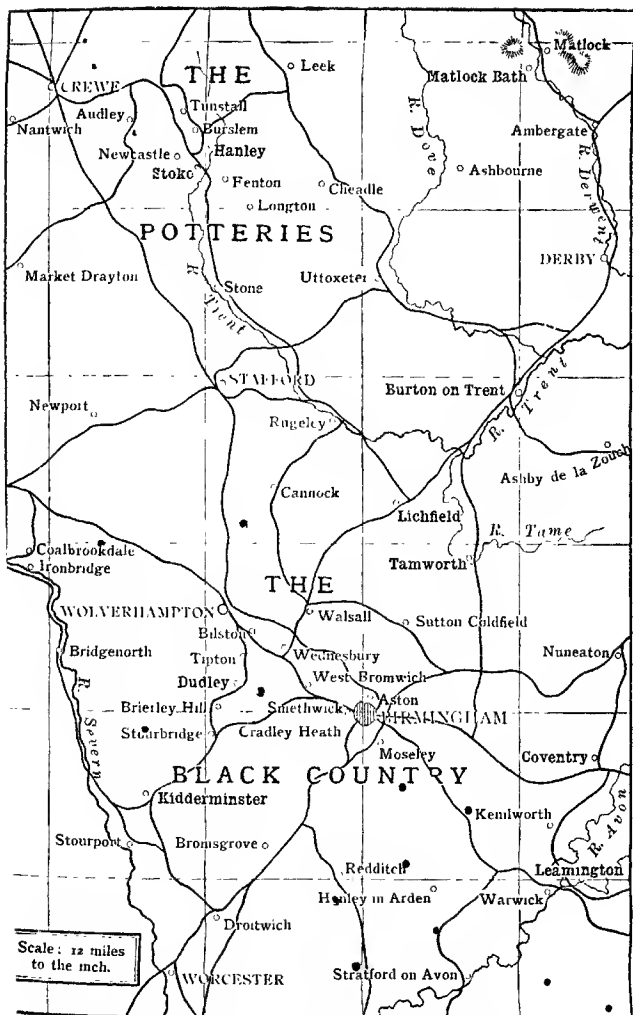
Cotton goods are chiefly made in Lancashire, Cheshire, and the neighbouring districts of Yorkshire and Derbyshire, and also in Lanark and Belfast; probably employing not far short of a million hands, keeping fifty-five million spindles constantly at work, and employing a capital of between forty and fifty millions sterling.

The chief towns involved in this gigantic trade are:—

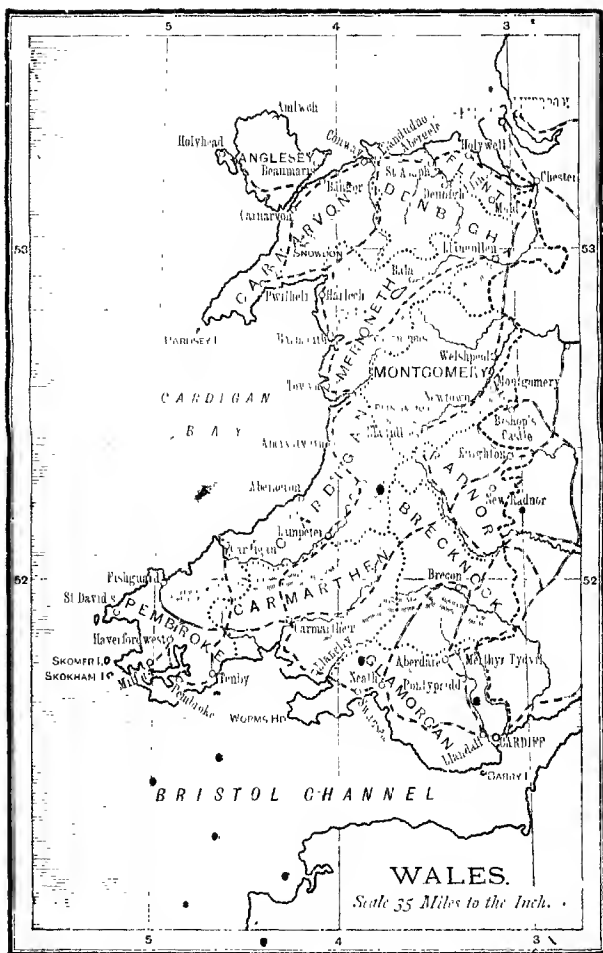
Manchester, Salford, Blackburn, Preston, Bolton, Rochdale, Wigan, Oldham, Bury, Chorley, Burnley, Nelson, and Accrington in Lancashire; Stockport and Hyde, in Cheshire; Glossop, in Derbyshire; Nottingham; Glasgow and Paisley, in Scotland; and Belfast, in Ireland.

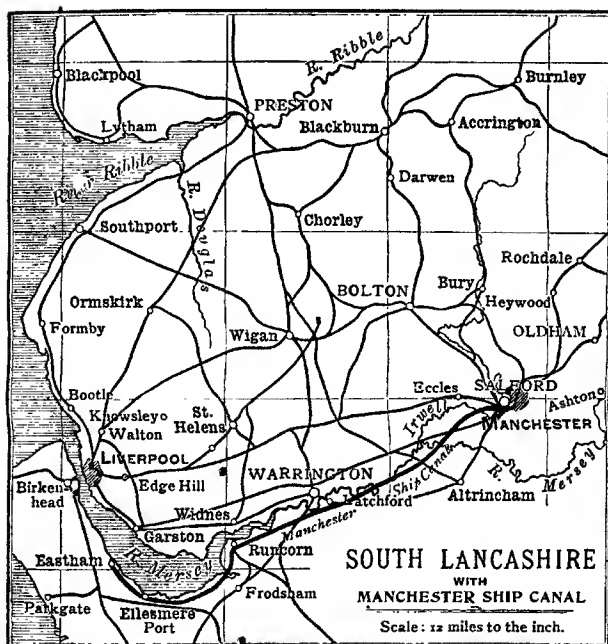
Manchester is the commercial centre of the district, distributing the raw material to the surrounding towns and collecting up the manufactured goods for export. Oldham and Bolton are concerned mostly with spinning, and Preston,

<sup>1</sup> The figures for seven years were in millions sterling. 1911, 71½; 1912, 80½; 1913, 70½; 1914, 55½; 1915, 64½; 1916, 84½; 1917, 110½.



MAP OF THE POTTERIES AND THE BLACK COUNTRY.





Blackburn,\* Accrington, Burnley and Nelson, mostly with weaving.

The total exports of cotton yarn and piece goods for seven years (in millions sterling) were: 1912, 108; 1913, 112½; 1914, 91; 1915, 75; 1916, 103; 1917, 129; 1918, 150.

**Cutlery.**—The term cutlery includes all cutting instruments such as scissors, razors, penknives, table-knives, hatchets, edge-tools, and similar articles.\* The manufacture of cutlery has been brought to great perfection in the United Kingdom; the principal factories being in London, Birmingham, and Sheffield.

Our export trade in cutlery amounts to nearly three-quarters of a million sterling, the largest purchasers in order being



Australasia, British South Africa, the United States, British North America, and the British East Indies.

**Damask.**—Flowered ribbons, and the costly silks and satins of Spitalfields, London, are specimens of damask manufacture.

**Gauze.**—Gauze is a light silken fabric, originally manufactured, it is said, at Gaza, in Palestine, whence the name. It is now made chiefly at Glasgow and Paisley, and in France and Switzerland.

**Gin.**—Gin is an ardent spirit largely distilled in London. Both English and Hollands gin consist of plain corn spirit slightly flavoured with oil of turpentine and other substances.

**Gingham.**—Gingham is a cotton fabric generally bearing a check pattern of interwoven threads. Originally made in India, it is now largely exported to that country from South Lancashire.

**Glass.**—Glass is made in immense quantities at St. Helens, South Shields, Stourbridge, Birmingham and Glasgow. The principal constituents of glass are silica and soda; lime, potash, and various colouring materials are also added. These are fused together at high temperatures. Silica is used in the form of flint, sand and quartz.

**Gloves.**—Some particular kinds of gloves are named from the place of manufacture, as *Berlin*, *Woodstock*, *Linnerick*, and *Kendal*. Gloves are also made in and around *Yeovil*, in Somersetshire, and at *Worcester*. *Yeovil* makes a speciality of white kid gloves, although its share of the trade in other kinds is very great.

**Hair Manufacture.**—The trade in *human hair* is very considerable, and much more important than would be supposed. A very large quantity is imported into London every year for making wigs and false curls. The fair hair nearly all comes from Germany, and the dark from France. Much is also imported from China. Next to human hair manufactures comes that of horsehair and the hair of other animals, used in the manufacture of brushes.

**Hosiery.**—The manufacture of stockings is chiefly carried on at Derby, Belper, Leicester, Nottingham, and Dumfries. *Silk hosiery* is generally manufactured at Derby; *woollen hosiery* at Leicester; and *cotton hosiery* at Nottingham. The exports of hosiery from this country are very considerable, but the

trade meets with much foreign competition, especially from Saxony.

**Iron.**—There are three important branches in the iron trade :—

1. The smelting of ironstone, that is, the manufacture of pig-iron.

2. The manufacture of hardware, as goods made of iron are generally termed, and

3. The manufacture of steel.

The chief iron-smelting districts are :—

1. The *Cleveland District* of the North Riding of Yorkshire, with its chief town, Middlesbrough. Nearly one-third of the ironstone produced in England is smelted here.

2. The *Furness District* of North Lancashire contains the busy towns of Barrow-in-Furness and Dalton-in-Furness. This district is devoted to the smelting of hematite, and to the manufacture of steel by the Bessemer process.

3. The *South Staffordshire Coal-field* supplies the busy towns of Wolverhampton, Dudley, West Bromwich, Walsall, Bilston, and Tipton, in all of which the smelting of ironstone goes on.

4. The *South Wales Coal-field*. In the mountain valleys of this region much iron is manufactured, especially in and around Merthyr Tydvil, Newport (Mon.) and Aberdare. Most of the ore smelted in this district is from Spain.

5. The *York, Derby, and Nottingham Coal-field* has its smelting centre round Rotherham.

6. Scotland, *Lanarkshire* (Airdrie and Coatbridge).

**Hardware.**—Hardware is the name given to iron goods in general, which are manufactured on the South Staffordshire Coal-field, the Yorkshire Coal-field, the South Wales Coal-field, the Scottish Coal-field, and elsewhere, as shown in the table on pages 100 and 101.

**Hooks and Eyes.**—These small dress fasteners are made with great rapidity by machinery, chiefly at *Redditch*.

**Lace.**—Lace is said to have been manufactured by machinery as early as the year 1768, by a stocking weaver of Nottingham. It is certain that a few years afterwards Nottingham became the centre of the machine-made lace trade.

**Lawn.**—Lawn is a fine variety of cambric formerly made exclusively in France and Flanders, but now manufactured at

*Barnsley*, in Yorkshire, *Dunfermline*, in Scotland, and in the north of Ireland.

ARTICLES.	TOWNS IN WHICH MADE.
Anchors.....	Cradley (Worcestershire)
Anvils .....	„ „ and Birmingham
Armour plates ..	Sheffield, Glasgow
Bolts .....	South Wales, Smethwick and Dudley
Buttons .....	Birmingham
Cables, chain ....	Cradley
„ telegraph ..	Silvertown (Essex)
Cannon .....	Woolwich, Newcastle
Corrugated iron ..	Wolverhampton, Bristol
Crucibles .....	Stourbridge (Worcestershire)
Cutlery .....	Sheffield [and Wolverhampton
Cycles .....	Coventry, Nottingham, Birmingham,
Files .....	Sheffield
Galvanised iron ..	Wolverhampton, Bristol, Tipton
Guns .....	Birmingham, Newcastle
Hinges .....	Bromsgrove, Wolverhampton, Willen- hall, and Birmingham
Locks .....	Wolverhampton, Willenhall
Locomotives ....	Birmingham, Leeds, Glasgow, Man- chester, Newcastle, and railway centres
Machinery ( <i>agricultural</i> )	Ipswich, Lincoln, Grantham, Bedford, Norwich, Banbury, and Gains- borough
Machinery ( <i>manufacturing</i> )	Birmingham, Sheffield, Manchester, Newcastle, Leeds, Oldham, Bolton, Leicester, Keighley, Smethwick
Nails .....	Birmingham, Dudley, Bromsgrove,
Needles .....	Redditch [Halesowen (Worcester)
Pens .....	Birmingham
Pins .....	Birmingham
Rails .....	Middlesbrough, Dowlais, Merthyr, Wednesbury, and Barrow
Rifles .....	Birmingham, Enfield
Screws .....	Birmingham [and Newport
Tinplates .....	Swansea, Neath, Llanelly, Cardiff,

ARTICLES.	TOWNS IN WHICH MADE.
Tin and zinc-lined goods	South Wales and South Staffordshire, Birmingham, London
Tools .....	Sheffield, Birmingham, London
Tubes .....	Wednesbury, Darlaston, Birmingham, and Smethwick
Wire .....	Warrington, Birmingham
Zinc-lined goods ..	Bilston, Wolverhampton, Tipton

**Linen.**—About the middle of the eighteenth century the inventions of Hargreaves and Arkwright were applied to the manufacture of linen at *Leeds*, which is still a great centre for flax-spinning, the weaving being carried on elsewhere. Linen, duck, tick, huckaback, diaper, drill, towelling, and other flax fabrics are woven at and about *Barnsley*; while sailcloth, dowlas, sheeting, and other strong textile fabrics are manufactured at *Dundee* and also at *Aberdeen*, *Arbroath*, *Sunderland* and *Stockton*. Shirtings, damasks, table-cloths, and other fine fabrics, are made at *Dunfermline*; while *Belfast* is famous for good linen and the finer kinds of textile goods.

**Muslin.**—Muslin is a thin, fine cotton fabric, which, until the early part of the present century, was made solely in India, by hand; but fine muslins are now made by machinery in this country.

**Nails.**—Until recently, nails were all made by hand, but now many are made by machinery, the great seat of the manufacture being at Birmingham. Wrought nails are made in the villages round about that town, and cut nails are produced by steam power in large factories.

**Ship Building.**—Ships, chiefly of iron and steel, are built on the Clyde, Wear, Tyne, and Tees; at the Hartlepoons, Belfast, Hull and Barrow.

Warships are built at Chatham, Portsmouth and Devonport.

**Oils.**—The principal oils manufactured in this country are train oil, olive oil, various kinds of seed oil, cocoa-nut oil and palm oil.

**Paper.**—The first paper-maker in England seems to have been a man named Tate, who had a mill at Hertford early in the sixteenth century. Another mill was established at Dartford,

in Kent, in 1588. There are now many mills, especially in Kent, Lancashire, and Derbyshire, where water power is easily obtained.

**Pen Manufacture.**—The steel-pen manufacture forms an important branch of the Birmingham trade.

**Porcelain.**—In England but little progress was made in the manufacture of porcelain until towards the close of the eighteenth century, when supplies of *kaolin* were discovered in Cornwall. Now, porcelain of superior quality is made at *Derby* and *Worcester*.

**Pottery.**—England holds the first place in the production of earthenware, then France, then Germany, the last named being far behind the other two. The most eminent of modern English manufacturers of pottery were Wedgwood and Minton. The great bulk of English earthenware is made in a district known as the Pottcries in Staffordshire; where the towns of *Stoke-on-Trent* (which now includes *Burslem* and *Hanley*), *Tunstall*, *Longton*, and *Fenton* are busily engaged in this industry; and the Doulton Works at *Lambeth*, London, have produced some very beautiful pieces of ware. *Stourbridge* makes a very hard kind of pottery from fire clay, called Stoneware.

**Rag Trade.**—"It will probably be news to most people to learn that rags to the value of close upon a million sterling are imported into this country every year. The cotton and linen varieties are used in the manufacture of the better kinds of *paper*; the woollen variety in the manufacture of *shoddy*, which is a very important branch of textile production. It is difficult for anyone not familiarly acquainted with the woollen district of Yorkshire to realize how great is the dependence of certain manufacturing centres on rags. *Dewsbury* and the small towns and villages in the immediate neighbourhood are the last refuge of the discarded rags of the world. Rags of all sorts, in all conditions, come from well-nigh everywhere—even from New Zealand or China—and are sold at the weekly auction sales and re-manufactured into army clothing and into some of the so-called 'all wool serges' which are writ large in the tailors' shop windows and which serve to enhance the attractions of our cheaply gilded youth, all unconscious of the transmigrations through which the stuff has passed in its various lives. It is not discarded suits alone

that are welcomed. Worn-out carpets, rugs and blankets, woollen shirts, underclothing, stockings, etc., everything, in fact, with a suggestion of wool in it, is subjected to the tender mercies of a machine known as the 'devil,' which tears it to pieces. The rags are, of course, chemically purified before being made up again, and are, indeed, partially purified before they undergo the disintegration process. It may be added that the shoddy industry is carried on in about 130 factories, and gives constant employment to thousands of machines and workpeople over a large area, and that there are firms which pay £5,000 or more every year in carriage alone on the bales they receive."<sup>1</sup>

**Saddlery.**—A large trade is done in this work in England, many thousand pounds' worth of saddles being exported every year. *Walsall*, in Staffordshire, is a great centre of this trade.

**Shawl Weaving.**—Of late this industry has much declined, but many shawls are still made at *Paisley*.

**Soda.**—Large quantities of soda are made for glass manufacture, as well as for ordinary washing and cleansing purposes. Chemically it is known as sodium carbonate, and in its manufacture sodium chloride—common salt—is largely employed. *Widnes* and *St. Helens*, in Lancashire, are the chief towns where it is made.

**Stocking Manufacture.**—A brother of William Lee, the inventor of the stocking-frame, introduced it to *Nottingham*, where stocking-weaving has since grown into a most important industry. Woollen stockings are made at *Leicester*.

**Sulphuric Acid.**—Sulphuric Acid is used in many manufactures, especially in the making of glass. The sulphur is largely obtained from iron pyrites. Great quantities are made at *Widnes* and *St. Helens*, in Lancashire.

**Thread.**—The most important places for the making of sewing thread are *Paisley*, in Scotland, and *Leek*, in Staffordshire.

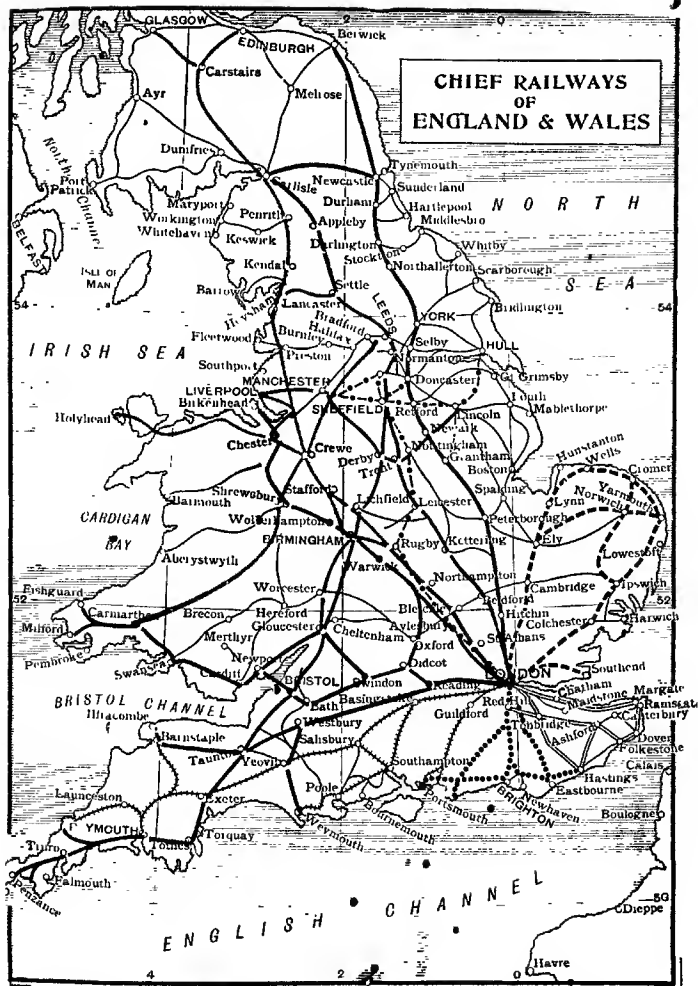
**Woollen Manufacture.**—The art of spinning yarn and making woollen cloth was introduced by the Romans, and it has always been an important industry in this country. Woollen goods are made in the *West Riding of Yorkshire*, at a few towns in the *West of England*, in *Wales*, and in *Scotland*.

The manufacture of blankets is carried on principally at

<sup>1</sup> *Pall Mall Gazette*.

*Dewsbury* and *Wakefield*, in the West Riding of Yorkshire, at *Witney*, in Oxfordshire, and at *Leicester*.

In the West Riding of Yorkshire are *Leeds*, the chief market for woollen cloth; *Bradford*, noted for its worsteds; *Dewsbury* and *Batley*, noted for shoddy goods. *Halifax* makes enormous quantities of carpets. *Welshpool*, *Dolgelly*, and *Newtown*, in Wales, and *Rochdale*, in Lancashire, are celebrated for their flannels. The fine cloths of *Trowbridge*, *Bradford-on-Avon*, and *Stroud*, in Wiltshire and Gloucestershire, are known as "West of England goods." In Scotland, woollen goods are made at *Galashiels*, *Hawick*, *Aberdeen*, *Stirling*, *Kilmarnock*, *Ayr*, *Dumfries* and *Innerleithen*, the cloth manufactured in the southern part of this district being known as *Tweed*.



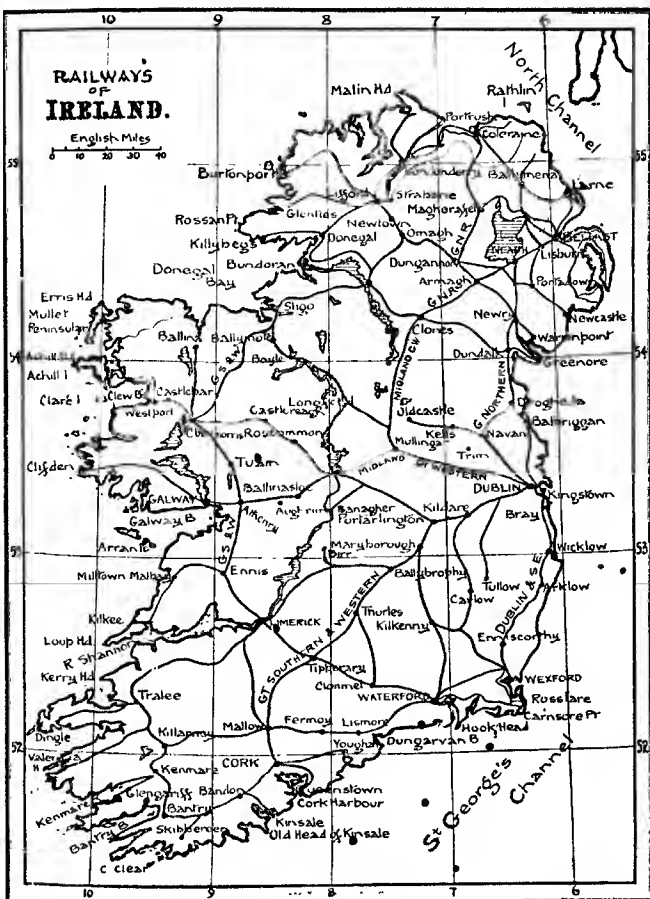


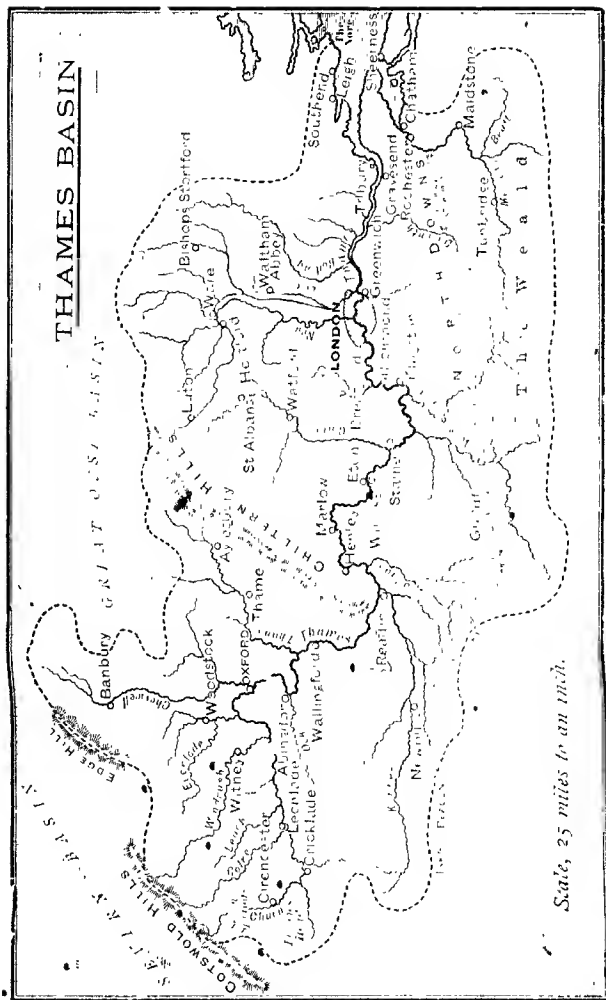


# RAILWAYS OF IRELAND.

English Miles

0 10 20 30 40





## CHAPTER XI.

### MEANS OF TRANSPORT.

**Rivers and Seaports.**—Many of the rivers of the United Kingdom are important commercially, as their mouths form havens where seaports are situated. It will be noticed in the case of Great Britain that these seaports are situated in pairs, almost opposite each other ; one on the west and the other on the east, as shown in the table.

WEST COAST.		EAST COAST.	
Estuary.	Ports.	Estuary.	Ports.
Clyde	Glasgow, Greenock	Forth	Leith, Bo'ness.
Solway	Carlisle	Tyne	Newcastle, etc.
Mersey	Liverpool	Humber	Hull.
Severn	Bristol	Thames	London.

In addition to the above, there are some noble harbours along the south coast of England, namely those of *Falmouth*, *Plymouth*, *Southampton*, and *Portsmouth*.

Ireland has many grand harbours, but few seaports. She has no foreign trade worth mentioning, her three ports, *Belfast*, *Dublin*, and *Cork*, trading chiefly with Great Britain.

**Canals.**—The Canals, properly so called, of the United Kingdom constitute a length of about four thousand six hundred and seventy miles,<sup>1</sup> and represent a capital of about forty-eight millions sterling. There are 184 miles of canal proper in Scotland and 848 miles in Ireland. About 1,200 miles of canals in England and Wales are owned by or are under the control of railway companies.

The greatest length in one canal is the *Shropshire Union*, 204 miles in length. This was acquired by the North-Western Railway Company, thus giving it access to Shrewsbury, Mid-Wales, Hereford and South Wales. The next greatest length in one canal, the control of which is also in the London and North-Western Railway Company is that of the *Birmingham Canal* Company, which is 160 miles in length. The *Trent and Mersey Canal*, now in the hands of the North Staffordshire

<sup>1</sup> 1,506 miles in 1918.

Railway Company, is 116 miles long. The *Kennet and Avon Canal*, acquired by the Great Western Railway Company, is 86 miles long. The *Lancaster Canal*, acquired by the London and North-Western Railway Company, is 60 miles long.

There is now a navigable waterway from the North Sea to the Bristol Channel, providing a channel along which barges drawing four feet of water can pass. The way lies through the Thames and Severn canal, which has been re-opened, and the distance, from London Bridge to Lechlade Bridge on the Thames, is 144 miles, while the length of canal from the Thames near Lechlade Bridge to the Severn is 39 miles.

The *Gloucester and Birmingham Navigation Company* possess the Sharpness docks on the estuary of the Severn, whence there is a ship canal, having a depth of fifteen feet, to Gloucester. From Gloucester to Birmingham is an ordinary canal, and a good deal of trade is carried on between Bristol, Newport, Swansea, Cardiff, and other places, on the one hand; as well as between Gloucester, Worcester, Birmingham, and other towns on the other hand.

#### TABLE OF THE PRINCIPAL CANALS IN THE UNITED KINGDOM.

##### I.—In England.

Name of Company.	Miles.	Connecting.
Aire and Calder .. ..	93	Rivers Aire and Calder.
Birmingham .. ..	160	Grand Trunk and Grand Junction.
Coventry .. ..	33	Coventry and Birmingham.
Grand Junction .. ..	190	Birmingham and London.
Kennet and Avon .. ..	86	Rivers Kennet and Avon.
Lancaster .. ..	60	
Leeds and Liverpool .. ..	143	Mersey and Ouse.
Manchester Ship .. ..	35½	Manchester and the Mersey.
Bridgewater .. ..	42	" " "
North Metropolitan <sup>1</sup> .. ..	10½	
Rochdale .. ..	35	
Sharpness New Docks and Gloucester & Birmingham .. ..	16 37	Birmingham and Worcester.
Shropshire Union .. ..	204	Severn and Birmingham.
Stafford and Worcester .. ..	51	Severn and Grand Trunk.
Trent and Mersey .. ..	116	
Warwick and Birmingham .. ..	22½	
Weaver .. ..	20	Chester and Grand Trunk.

<sup>1</sup> Better known as the Regent's Canal.

## II.—In Scotland.

Name of Company.	Miles.	Connecting.
Caledonian .. .. . Forth and Clyde .. .. .	60	Fort William and Inverness. Dumbarton and Grangemouth.

## III.—In Ireland.

Name of Company.	Miles.	Connecting.
Royal .. .. . Grand .. .. . Newry .. .. . Ulster .. .. .	361	Dublin and the Shannon. Dublin and the Shannon. Loughs Neagh & Carlingford. Loughs Neagh and Erne.

**Railways.**—There are in the United Kingdom about 23,700 miles of railways, and these comprise 40,808 miles of running lines and 14,928 miles of sidings.

## CHIEF RAILWAYS OF ENGLAND.

Railway.	London Terminus.	Chief Towns on Line.
London and North-Western (L. & N.W.R.)	Euston	Rugby, Crewe, Preston, Lancaster, Carlisle; Leeds & Manchester; Holyhead; Birmingham; Liverpool.
Great Northern (G.N.R.)	King's Cross	Peterborough, Doncaster, York.
Midland (M.R.)	St. Pancras	Leicester, Derby, Shef- field, Leeds, Carlisle, Bristol.
Great Western (G.W.R.)	Paddington	Reading, Bristol, Exeter, Plymouth, Penzance, Gloucester, Swansea.
London and South-Western (L. & S.W.R.)	Waterloo	Southampton, Portsmouth, Plymouth, Exeter.
Great Eastern (G.E.R.)	Liverpool Street	Cambridge, Norwich, Yar- mouth, Ipswich, Col- chester, Harwich.

CHIEF RAILWAYS OF ENGLAND (*continued*).

Railway.	London Terminus.	Chief Towns on Line.
South-Eastern and Chatham (S.E. & C.R.)	Holborn Viaduct, London Bridge, Cannon Street, Charing Cross, Victoria	Chatham, Faversham, Canterbury, Dover, Croydon, Tunbridge, Ashford, Folkestone, Reading.
London, Brighton and South Coast (L.B. & S.C.R.)	Victoria	Croydon, Portsmouth, Brighton, Newhaven, Eastbourne.
North-Eastern (N.E.R.)		Normanton, York, Darlington, Newcastle, Berwick.
Lancashire and Yorkshire (L. & Y.R.)		Liverpool, Wigan, Bolton, Bury, Manchester, Rochdale, Wakefield, Normanton.
Great Central (G.C.R.)	Marylebone	Liverpool, Manchester, Sheffield, Grimsby, Nottingham, Leicester, Rugby.

Other less important railways are :—The London Electric, the Central London, the Metropolitan, the Metropolitan and District, the City and South London, the Cheshire Lines, the North Staffordshire, the Taff Vale.

## CHIEF RAILWAYS OF SCOTLAND.

Railway.	Chief Towns on Line.
Caledonian	Carlisle, Gretna, Lockerbie, Glasgow, Stirling, Perth, Forfar, Stonehaven, Aberdeen.
North British	Berwick, Dunbar, Edinburgh, Linlithgow, Stirling, Alloa, Cupar, Dundee. Edinburgh and Dundee direct by Forth Bridge. Dundee to Aberdeen.
Glasgow and South-Western	Glasgow, Paisley, Kilmarnock, Dumfries, Annan, Gretna, Carlisle.
Highland	Perth, Dunkeld, Blair Athol, Forres, Nairn, Inverness, Dingwall, Tain, Thurso.
Great North of Scotland	Aberdeen, Peterhead, Banff, Ballater, Elgin.
Port Patrick and Wigton	Castle Douglas, Stranraer.

## CHIEF RAILWAYS OF IRELAND.

Railway.	Chief Towns on Line.
Great Northern	Dublin, Balbriggan, Drogheda, Dundalk, Newry, Belfast, Antrim, Coleraine, Londonderry, Donegal.
Midland Great Western	Dublin, Mullingar, Athlone, Ballinasloe, Galway.
Great Southern and Western	Dublin, Kildare, Waterford, Thurles, Tipperary, Mallow, Cork, Killarney.
Dublin and South-Eastern	Dublin, Bray, Glendalough, Wexford.
Belfast and Northern Counties	Belfast, Londonderry, Antrim.



## CHAPTER XII.

### IMPORTS AND EXPORTS.

The leading commercial nation of the world.—The United Kingdom is the leading commercial nation of the world. Its merchant fleets bring raw materials from all parts of the globe, and carry back, in exchange, manufactured goods. Thus, *cotton*, from the United States, *wool*, from Australia, and *jute*, from India, are imported into the United Kingdom, and there woven into fabrics, which are shipped again to all the countries of the world. Besides this, British ships are extensively employed in the carrying trade of other nations. This is especially true of the United States, more than half of their imports being carried in British vessels.

It will be seen from the table on the opposite page that a very large proportion of British exports consists of cotton and woollen goods. Most of the *cotton goods* are made in South Lancashire, where more than half a million operatives are employed in the cotton mills. *Woollen goods* are made in the West Riding of Yorkshire, in the West of England, and in Wales, this important industry finding employment for at least a quarter of a million of people.

The establishment and growth of these manufactures have been due to the vast mineral wealth of the kingdom, especially in *coal* and *iron*. The United Kingdom exports its surplus of coal, but the produce of iron is not sufficient for domestic needs, and iron ores are largely imported from the Spanish port of Bilbao.

## VALUE OF BRITISH IMPORTS AND EXPORTS, 1917.

(Value given in millions sterling.)

IMPORTS.		EXPORTS.	
Commodity.	Value.	Commodity.	Value.
<b>Food and Drink ..</b>	454 $\frac{3}{4}$	<b>Cotton Goods .. ..</b>	146
Grain and Flour ..	175	Woollen Goods .. ..	53
Bacon and Hams ..	48 $\frac{1}{2}$	Fabrics other than Cotton and Woollen .. ..	19
Dead Meat and Fish .. ..	45	Machinery and Metal Goods .. ..	77 $\frac{1}{2}$
Butter .. ..	19	Coal and Other Fuel ..	51 $\frac{1}{2}$
Cheese .. ..	19	Food and Drink .. ..	16 $\frac{1}{2}$
Lard .. ..	9	Raw Materials for Manu- facture .. ..	15 $\frac{1}{2}$
Margarine .. ..	7 $\frac{3}{4}$	Ships .. ..	1
Condensed Milk ..	4	Chemicals, Drugs, etc. ..	25 $\frac{1}{2}$
Eggs .. ..	5	Leather Goods .. ..	5
Fruit .. ..	8	Clothing .. ..	15 $\frac{1}{2}$
Dried Fruits .. ..	2 $\frac{1}{2}$	Cutlery, Hardware, etc. ..	4 $\frac{1}{2}$
Vegetables .. ..	6 $\frac{1}{2}$	Miscellaneous .. ..	96 $\frac{1}{2}$
Sugar .. ..	36 $\frac{1}{2}$	Re-exported Merchandise	69 $\frac{1}{2}$
Tea .. ..	14 $\frac{1}{4}$		
Coffee .. ..	2		
Cocoa .. ..	4 $\frac{1}{2}$		
Miscellaneous .. ..	48 $\frac{1}{2}$	<b>Total .. ..</b>	<b>596<math>\frac{3}{4}</math></b>
<b>Raw Materials for Manufacture ..</b>	348 $\frac{1}{2}$	The exact value of imports and exports for five years are as follows:—	
Cotton .. ..	110 $\frac{1}{2}$	Imports, 1913, 768,734,739	
Wool .. ..	51 $\frac{1}{2}$	Exports, 1913	
Other textiles ..	28	Domestic .. ..	525,245,289
Oils, Seeds, etc.	75 $\frac{3}{4}$	Re-exptd. .. ..	109,575,037
Hides and Skins ..	18 $\frac{1}{4}$	Total .. ..	634,820,326
Paper Materials ..	10 $\frac{1}{2}$	Imports, 1914, 696,635,113	
Minerals .. ..	27	Exports, 1914	
Timber .. ..	25 $\frac{1}{2}$	Domestic .. ..	430,721,357
Miscellaneous ..	37 $\frac{1}{2}$	Re-exptd. .. ..	95,474,166
		Total .. ..	526,195,523
<b>Manufactured Articles ..</b>	186 $\frac{1}{2}$	Imports, 1915, 851,893,350	
Chemicals, Drugs, and Dyes ..	28	Exports, 1915	
Tobacco .. ..	4	Domestic .. ..	384,868,448
Miscellaneous (Par- cel Post) ..	6	Re-exptd. .. ..	99,062,181
		Total .. ..	483,930,629
<b>Total .. ..</b>	<b>1064</b>	Imports, 1916, 948,506,492	
		Exports, 1916	
		Domestic .. ..	506,279,707
		Re-exptd. .. ..	97,566,178
		Total .. ..	603,845,885
		Imports, 1917, 1,064,164,678	
		Exports, 1917	
		Domestic .. ..	527,079,746
		Re-exptd. .. ..	69,677,461
		Total .. ..	596,757,207

## CHAPTER XIII.

### COMMERCIAL TOWNS.

London.—London is situated on both banks of the River Thames, at the head of its ocean navigation. At high tide the river at London Bridge is thirty feet deep. During the Roman occupation of Britain this site was the first available landing-place from the sea on the north side; but in later times the river was embanked for miles below London, and the adjoining marshy lands were thus reclaimed. The city is about forty miles from the Nore lightship, which marks the mouth of the Thames. The seaport of London includes the whole of the river from London Bridge as far east as Gravesend, about twenty miles distant.

London is the capital of the United Kingdom, and the largest city in the world; it is also the world's greatest seaport and financial centre.

Six hundred years ago, when the most westerly of the Hanse "factories," or trading depots, was London, it is thought that the city had a population of about seventy-five thousand. Even then it was the largest place in the island of Great Britain; and it has ever since been the political and business centre. The foreign commerce of the port was, however, of no great value until the great voyages of discovery led to the founding of the East India Company, the Virginia Company, and the Hudson Bay Company, all of which were established in the seventeenth century. In the year 1801 the population of greater London was less than a million; according to the latest returns available, it now contains with its outlying areas seven and a quarter millions of people.

Although Liverpool has in recent years become a commercial rival of the metropolis, the latter still leads in the value of its trade both domestic and foreign. The imports of London are much greater than the exports, because it is the railway centre and distributing point for the whole kingdom.

## TABLE OF METROPOLITAN INDUSTRIES.

Architects	Westminster
Bankers	Lombard Street, Prince's Street, Lothbury
Barristers	Inns of Court and the Temple
Biscuit Manufacturers	Bermondsey
Cabinet Makers	Shoreditch, Hoxton, and St. Pancras
Candle Manufacturers	North Woolwich and Battersea
Cattle Market	Caledonian Road, Islington
Coach Builders	Long Acre
Colonial Market	Mincing Lane
Commercial Companies	Cornhill and King William Street
Corn Market	Mark Lane
Diamond Merchants	Hatton Garden
Engineers	Westminster
Foreign Fruit Market	Northern End of London Bridge
Fruit Markets	Covent Garden, Farringdon
Furniture Manufacturers	Shoreditch, Hoxton, Tottenham Court Road
Hop Merchants	Southwark
Jam Makers	Bermondsey
Jewellers	Clerkenwell
Lawyers	Inns of Court and the Temple
Leather Manufacturers	Bermondsey and Southwark
Match Makers	Bow and Wandsworth
Meat Market	Smithfield
Opticians	Clerkenwell, Holborn, Norwood, Clapham
Physicians	Harley Street, Cavendish Square
Pickle Makers	Soho, Southwark
Potters	Lambeth
Publishers—Books	Paternoster Row
„ Periodicals	Fleet Street, Blackfriars, Strand
Scientific Instrument	Hatton Garden
„ Makers	
Shipping Agents	Fenchurch Street, Leadenhall Street, Cockspar Street
Shoe Manufacturers	Shoreditch, Bethnal Green, Hackney, Southwark, Newington
Silk Weavers	Spitalfields and Bethnal Green
Soap Makers	Deptford, West Ham and Battersea
Stock and Share Market	Stock Exchange (behind the Bank of England)
Sugar Bakers	Whitechapel
Tailors	Shoreditch, Bethnal Green, and the Tower Hamlets
Tanners	Bermondsey
Toy Merchants	Houndsditch
Watch Makers	Clerkenwell

A vast coasting fleet hails from this port. Having no great rival on the eastern coast of the kingdom, London controls most of the British, foreign and colonial trade with the Baltic and Mediterranean ports. *Tea* and other products from the East, by way of the Suez Canal, and *wool* from the Australasian colonies, find their chief market in London, which is also the home port for most of the West Indian trade. Docks for large vessels have been made at Tilbury, which is connected by rail with London.

The local industries of London are as varied in character and as vast in extent as the greatness of the city would lead us to expect. If any occupations deserve special mention by reason of the numbers employed in them and the value of their products, it is to be said that no other city in the world brews so much malt liquor or does so great a publishing business.

The industries of London represent almost every kind of work which can be produced by the hand of man ; but a few special ones are identified with particular districts, as shown in the table on page 113.

**Glasgow.**—Glasgow, on the river Clyde, the largest city of Scotland, is the *second city* of the British Isles, and has the honourable distinction of being one of the best governed cities in the world. Its population is about a quarter that of London proper ; and, like Liverpool, it has only become a great city within the last hundred years. As a port on the western coast of Great Britain, it is favourably situated to receive raw materials from America. Thus, before the Revolutionary war in America in the eighteenth century broke up the trade, most of the *tobacco* from Virginia and the Carolinas found a market in Glasgow. Similarly, *raw cotton* has been a great import here during the earlier and middle part of the nineteenth century. This trade was interrupted by the Civil War in America ; but what Glasgow lost by its stoppage was more than made good by the development of her *ship-building* industry. The American Civil War threw most of the carrying trade of the United States into British hands ; and nearly all the new ships required for it were built on the Clyde.

Lying in the heart of the coal and iron region of Scotland, Glasgow is now the centre of a great *cotton* manufacturing

district, and the *shipyards* for building iron vessels here, and lower down the Clyde, are the largest in the world. The river from Glasgow to the head of the estuary was quite shallow at the beginning of the nineteenth century; but its channel has been deepened, so that the largest steamships now come to the splendid docks of this port.

The chief manufactures of Glasgow are *cotton goods*, especially muslins, gingham and calicoes. In connection with the bleaching and calico printing are extensive *chemical works*. Among *woollen goods* manufactured here, curtains, hangings, and all kinds of carpets must be mentioned. *Marine engines*, *locomotives*, and *sewing machines*, are turned out in vast numbers. Glasgow controls the iron trade of Scotland; but this is much less important than the same trade in England.

A large part of the Scottish west coast herring catch is marketed at Glasgow; although *Wick*, a small town in the extreme north-east, has been for fifty years the head-quarters of the Scottish herring fisheries.

**Liverpool.**—Liverpool, the third city of England in population and second in commerce, is on the River Mersey, about three miles from the Irish Sea. It is the most important port on the west coast of Great Britain, and contains nearly three-quarters of a million people. The Mersey at Liverpool is about a mile wide, and the docks and wharves extend for six miles along the north-eastern bank of the river; while on the opposite bank, are the great docks of Birkenhead. The two are connected by a railway under the bed of the river; and together they form one great port.

Liverpool is a city of modern growth. Previous to the invention of machinery suitable for textile manufactures and the consequent spread of the cotton culture in the southern states of the American Union, the town was a small one, carrying on a considerable trade with Ireland. The development of cotton and woollen manufactures in that part of South Lancashire lying behind Liverpool has made this city one of the great trading ports of the world.

The imports are chiefly raw materials and food, from the *United States*, *Canada*, *South America*, *West Africa*, and the *West Indies*, especially cotton, grain, animal products, tobacco, sugar, etc. The principal exports are manufactured goods of cotton, wool, and iron. The value of these manufactured

exports is, of course, much greater than that of the raw material from which they are made.

Liverpool itself is not a noted manufacturing city; but sugar is refined and tobacco is manufactured in great quantities at this port, where they are largely received into the United Kingdom. In spite of the Manchester Ship Canal it still does the greater, although a diminishing part, of the import trade of Manchester.

**Manchester.**—The city of Manchester is situated on the Irwell, a small tributary of the Mersey, about thirty-five miles inland from Liverpool. With the county borough of Salford, on the opposite bank of the river, it forms one immense mass of factories, dwellings, warehouses, etc., with a population of over eight hundred and seventy thousand people, to which Salford contributes over two hundred and eleven thousand.

Manchester is the centre of the chief industrial district of England, and is famed throughout the world for its *cotton* and *woollen goods*. Liverpool is the port through which this trade has been carried on in the past; but a ship canal has been constructed, which enables the largest ocean steamships to come directly to the Manchester docks.

**The Manchester Ship Canal.**—This great engineering feat, which is known as the Manchester Ship Canal, was begun in 1886, and was opened for traffic in November, 1893. It is twenty-six feet deep and one hundred and twenty feet wide across its floor, with numerous open side-basins, or widenings, for the accommodation of shipping. For two-thirds of its length, the canal is little else than a new, straight and deep channel for the Mersey itself. The principal docks, with a frontage of more than four miles, are on the Salford bank. The canal is entered from the sea at **Eastham**, a point in the Mersey estuary about four miles above Birkenhead, and is in barge communication with the rest of England. Lines of steamers start now from Manchester; there is a regular fruit trade with the West Indies; while in the cotton season, boats run direct from Charleston, New Orleans and Galveston.

**Birmingham.**—Of the large inland factory towns of the United Kingdom, which have grown up on or near the great coal-fields, Birmingham holds the first place. It has more than eight hundred and sixty-eight thousand people; famous for its manufactures of *metal goods*. These include *brass wares*,

and all kinds of *iron and steel* products, from the heaviest *machinery* to the smallest *hardware* goods. The neighbouring towns and villages, as Wolverhampton, Walsall, West Bromwich, Wednesbury, Redditch, Dudley, Halesowen, Smethwick, Oldbury, Bromsgrove and Stourbridge, have similar industries, iron and coal being mined near by. Canals connect Birmingham with the Thames, Severn, Mersey and Trent.

**Leeds.**—Leeds, the sixth city in population of the United Kingdom, situated in the West Riding of Yorkshire, is the centre of a great trade in *clothing, leather, and machinery*. It has a population of four hundred and seventeen thousand.

**Sheffield.**—Sheffield, with four hundred and sixty-nine thousand people, also in the West Riding of Yorkshire, has long been noted for its *cullery*. Close to the town are coal and iron mines and grindstone quarries. *Steel rails, armour plates* for ironclads and *ships' plates* are also made here in great quantities. It imports much of its iron from Sweden.

**Edinburgh.**—Edinburgh, the ancient capital of Scotland, is a city containing over three hundred and thirty thousand people, and is situated on the southern shore of the Firth of Forth. It is an educational and distributing rather than a manufacturing city; but it has long been famous for its great *publishing business*, including establishments for *type-founding, engraving, printing, and bookbinding*. Liquors, furniture, brass ware, and glass are also made here.

**Belfast.**—Belfast, the largest and busiest city of Ireland, is of nearly the same size as Edinburgh, and is the only considerable manufacturing town in the Emerald Isle. It produces more *linen goods* than any other city of the world. All the flax of the neighbouring counties of Ireland is manufactured here, and additional supplies are imported from the continent of Europe, principally from Belgium, which supplies the finer kind, and Russia. The water of the Lagan is most suitable for bleaching. Belfast has great *ship-building* yards, where iron steamships for the "White Star" and other lines are built. It has three hundred and eighty-seven thousand inhabitants.

**Dublin.**—Dublin, the capital of Ireland, with a population of three hundred and four thousand, is situated on the east coast, opposite to Liverpool. It is a city much less than Belfast in size. Most of the direct trade between Ireland and



Great Britain is carried on through *Kingstown*, the port of Dublin, situated a few miles below the city on the shores of Dublin Bay. *Whisky* is distilled and *stout* is brewed in great quantities at Dublin, which has no other manufactures.

**Bristol.**—Bristol, near the estuary of the Severn, is a very old port with three hundred and thirty-five thousand people. It carries on a considerable trade with America, particularly in the import of *tobacco* from the West Indies. As a result, large tobacco factories are to be found here, and there are also *cocoa* and *chocolate* works, and extensive *boot* and *shoe* factories. Since it is difficult for large ships to reach the docks at Bristol at low water large docks have been built at Avonmouth, similar to those built at Tilbury for London.

**Bradford.**—Bradford, a town of nearly two hundred and sixty-seven thousand in the West Riding of Yorks, is the chief seat of the *worsted* manufacture. *Silk velvet* is another product of this busy, go-ahead place.

**Nottingham.**—Nottingham, an old midland town, which is less than Bradford, is famed for its *cotton hosiery* and *machine-made lace*. It has two hundred and thirty-seven thousand inhabitants.

**West Ham.**—To the east of London and separated from it by the River Lea, lies the borough of West Ham, a town of wonderful but recent growth. Manufactures of *matches*, *soap*, *chemicals*, and *artificial manures* are carried on here.

**Hull.**—Hull, or more properly *Kingston-on-Hull*, situated on the Humber estuary, is a port containing two hundred and forty-six thousand people. Once chiefly famous as a fishing port, it has now a busy *continental trade*, especially with Hamburg and Bremen, directly east of Hull across the North Sea. It also communicates with the ports of Norway, Sweden and Denmark. Hull has a magnificent system of docks.

**Salford.**—*See under Manchester.*

**The Tyne Ports.**—*Newcastle-on-Tyne* with *North Shields* and *South Shields* are grouped together in the Returns of the Board of Trade as the Tyne Ports. Newcastle, with two hundred and sixty-six thousand inhabitants, is much the largest of these Tyne Ports, which do a vast amount of *coal-exporting*. Newcastle has also *ship-building* yards and *glass-making* factories. Gateshead on the south side of the Tyne is really a part of Newcastle.

**Portsmouth.**—Portsmouth, the principal *home station of the British navy*, finely situated behind the Isle of Wight, is strongly fortified. It has a hundred and ninety-eight thousand inhabitants.

**Dundee.**—Dundee, the third city of Scotland, has one hundred and eighty-one thousand inhabitants. It is situated on the Firth of Tay, forty miles to the north of Edinburgh. The *harbour* is commodious, and has an admirable system of docks, besides *ship-building* yards. This port is the head-quarters of the Scottish whale and sea fisheries.

This city has long been known for its manufactures of flax, and it still produces more *linen goods* than any other town in Great Britain; but the foremost industry of Dundee is the manufacture of *jute fabrics*, a business which has grown to enormous proportions within the last half-century. The *raw jute* comes directly to Dundee, from Calcutta, and Dundee merchants have even set up jute-mills in Calcutta itself. *Hemp* is another coarse fibre imported and manufactured into textile fabrics here.

**Leicester.**—Leicester, a very ancient midland town of two hundred and thirteen thousand inhabitants, has many *shoe* and *lace* factories, but it is best known for its *woollen hosiery*.

**Oldham.**—Oldham, a smoky town of South Lancashire, with over one hundred and thirty-three thousand people, is noted for its *cotton yarn*.

**Sunderland.**—Sunderland, at the mouth of the Wear, ten miles south of Newcastle, a town rather larger than Oldham, is an outlet for the produce of the rich coal-mines of Durham, and the most important *ship-building* centre in England.

**Cardiff.**—Cardiff, the largest town in Wales, does an immense *coal trade*, sending more coal to foreign countries than any other town. It has a population of over one hundred and sixty-nine thousand. Newport has a large coal trade.

**Blackburn, Bolton, etc.**—Next to Liverpool, Manchester, and Oldham, the largest towns in Lancashire are Blackburn, with one hundred and thirteen thousand people; Bolton, with fifty-one thousand more; Preston, with a population of one hundred and seven thousand; Burnley, with one hundred and six thousand inhabitants; Ashton, with

thirty-nine thousand ; and Bury, having a population of nearly sixty thousand. These towns are engaged in the *cotton trade*.

**Aberdeen.**—Aberdeen, the fourth city of Scotland, has a population of one hundred and sixty-five thousand. It is situated on the north-east coast of that country, on a harbour, naturally poor, which has been greatly improved by breakwaters and piers. The industries and commerce of this port are in a flourishing condition. *Woollen cloths* and *carpets*, *linen sheetings*, *towelings*, and *canvas*, *chemicals*, *machinery* of many kinds, *paper* and *envelopes*, are the leading products. The largest *comb factory* in the world is established here. There are busy *ship-building* yards in the harbour, a hundred of boats from Aberdeen take part in the herring fisheries. Very fine *granite* has long been quarried in the neighbourhood ; the city is built of it, and the streets are paved with it, and much of it is exported owing to the facilities for carriage by sea.

**Derby.**—Derby, a midland town of about one hundred and nineteen thousand people, is noted for its manufactures of *silk hosiery* and *porcelain*. The head-quarters of the Midland Railway Company are here.

**Swansea.**—Swansea, the second town of Wales, with a population of one hundred and eleven thousand, does a vast trade in the *smelting* of *iron*, *copper*, *silver*, *zinc*, *tin*, and *lead*. The iron ores of northern Spain are received here ; the copper ores are imported from all parts of the world, and tin ore from the Straits Settlements and the East Indies.

**Middlesbrough.**—Middlesbrough, a town of recent and rapid growth in the North Riding of Yorkshire, has been created by the *iron trade*, ore of splendid quality being found in the *Cleveland District* close by, and limestone only about forty miles away. It is a town of over one hundred and nineteen thousand people.

**Cork.**—Cork, the third city of Ireland, is less in size than Middlesbrough. It is situated on the River Lee, eleven miles from the magnificent Cork Harbour, but its trade is only that of Aberdeen. It ships dairy produce to Great Britain ; Queenstown, its outer port, is the place of call for New York steamships. Cork has over seventy-six thousand inhabitants.

**Leith.**—Leith, a town of over eighty thousand inhabitants, adjoins Edinburgh, and is its *port*. It is an important centre

of trade in *grain, timber, and wool* from the continent ; it has also a busy coasting and fishing fleet.

**Paisley.**—With a population of eighty-nine thousand, Paisley is noted for its *woollen goods* and *cotton thread*, while *Kilmarnock*, a place not half as large, has manufactures of *blankets* and fine *carpets*.

**Greenock.**—Greenock, twenty miles below Glasgow, on the Firth of Clyde, is a town of about seventy-eight thousand inhabitants. It is a kind of lower port for the commerce of Glasgow. The chief *imports* are *iron ores* and *raw sugar* ; while the local industries are *iron-smelting*, *iron ship-building*, and *sugar-refining*.

**Southampton.**—On the south coast of England, at the head of a deep land-locked inlet, is Southampton. Lying nearer to London than any other large English port, and being easily reached from the open ocean, Southampton has come into importance as a *terminus for American steamship lines*. It also communicates with the Channel Islands and Northern France. One hundred and fifteen thousand inhabitants.

**Northampton.**—Northampton, next to London the chief *shoe-manufacturing town* of England, contains about eighty-two thousand people.

**Reading.**—Reading, at the junction of the Kennet with the Thames, is noted for the manufacture of *biscuits*. It has a population of about eighty thousand.

**Smaller towns.**—**Honiton**, in Devonshire, is celebrated for its *hand-made lace* ; **Wilton**, in Wiltshire, and **Kidderminster**, in Worcestershire, for *carpets*. **Coventry**, in Warwickshire, is noted for its *cycles* and silk *ribbons* ; and **Burton-on-Trent**, in Staffordshire, is a great *ale-brewing* centre. **Perth**, twenty miles above Dundee, on the Tay, in Scotland, a town of nearly thirty-six thousand people, has great *aye works* and *bleaching fields* ; it also manufactures *muslin*, *ginghams*, and imitation Indian *shawls*. As the Tay is quite shallow here, the foreign trade is small. **Barrow**, like **Middlesbrough**, is a town that has grown up rapidly on account of the iron found near. It builds ships and supplies iron for the ship-building industry of Belfast. Besides its fishing trade, **Grimsby** deals with traffic to and from the continent. **Harwich**, **Newhaven**, and, to some extent **Goole**, unimportant in themselves, rank among the first ports of the country when the value of the continental

traffic passing through them is considered. After these come **Dover** and **Folkestone**. Dover is also a military station, and the new harbour, constructed primarily for the use of the navy, has led to its being used as a port of call for Atlantic steamers from Europe.

**Limerick**, at the head of the Shannon estuary, is a town of thirty-nine thousand people. Its only important manufactures are *linen*, *spirits*, and *malt liquors*. It imports maize and wheat directly from the United States, but its export trade is very small.

## CHAPTER XIV.

### TRADE ROUTES.

THE business man who wishes to cross over to the continent of Europe has the choice of several trade routes, any of which will land him upon the opposite mainland.

**Routes to France.**—There are at least five routes open to the traveller who wishes to go to France.

1. The *South-Eastern and Chatham Railway Company's* route from *Dover* to *Calais* ;

2. The *South-Eastern and Chatham Railway Company's* route from *Folkestone* to *Boulogne* ;

The "channel passage" in either of the above cases occupies only about an hour, and fast trains run from London to the harbours alongside the boats.

3. The *London, Brighton, and South Coast Railway Company's* route from *Newhaven* to *Dieppe* ;

4. The *London and South-Western Railway Company's* route from *Southampton* to *Havre* ; and

5. The last-named railway company's route from *Southampton* to *St. Malo*.

**Routes to the "Low Countries,"**—There is ample choice of route from London to *Belgium* and *Holland*.

1. We may travel by the *South-Eastern and Chatham Railway* to *Queenborough* or *Folkestone*, and thence take steamboat to *Flushing*, at the mouth of the *Scheldt* ; or, if we prefer a shorter sea voyage, •

2. We may choose the steamboats which run from *Dover* to *Ostend*.

3. The *Great Eastern Railway* will carry us quickly from London to *Harwich*, whence their swift and well-appointed boats ply to *Antwerp*, *Rotterdam*, or the *Hook of Holland*.

4. Several lines of steamers run direct from London to *Rotterdam* and the *Hook*.

**Routes to the North of Europe.**—The quickest way to reach any of the ports of Norway is to travel from London by the *Great Northern Railway* to *Hull*, whence the steamers of the

Wilson line will convey us across the North Sea to Norway, or any one of the Baltic ports. For other routes reference may be made to the map of the North Sea.

### Steam-Boats Running in Connection with London Railways.

Port.	Sailing From.	Day.	Railway Company.	Railway Station.
Antwerp <sup>1</sup>	Harwich	Daily	Great Eastern	Liverpool Street
Boulogne	Folkestone	Twice a day	S.E. & C.R.	Charing Cross
Caen	Southampton	Daily	South-Western	Waterloo
Calais	Dover	Thrice daily	S.E. & C.R.	Charing Cross, Cannon Street, and Victoria.
Cherbourg	Southampton	Tues., Thurs., Sat.	South-Western	Waterloo
Copenhagen	Harwich	Mon., Thurs., Sat.	Great Eastern	Liverpool Street
Dieppe	Newhaven	Twice a day	L.B. & S. Coast	Victoria
Flushing	Queenborough	"	S.E. & C.R.	Holborn, Victoria
Granville	Southampton	Twice a week	South-Western	Waterloo
Hamburg	Harwich	Wed. and Sat.	Great Eastern	Liverpool Street
Havre	Southampton	Daily	South-Western	Waterloo
Honfleur	"	Mon., Wed., Fri.	"	"
Hook of Holland	Harwich	Daily	Great Eastern	Liverpool Street
Ostend	Dover	Thrice daily	S.E. & C.R.	Chg. Cross, Holborn
Rotterdam	Harwich	Daily	Great Eastern	Liverpool Street
Rouen	Southampton	"	South-Western	Waterloo
St. Malo	"	Mon., Wed., Fri.	"	"
Hamburg	Grimsby	Daily	Great Central	Marlybone

<sup>1</sup> Known on the continent as Anvers.

**General Steam Navigation Company's Routes.**—The vessels of the above-named steamship company run to the French, Belgian and Dutch ports; to those of the Baltic and Bay of Biscay; and they also communicate with all the chief ports of the Mediterranean.

**England to New York.**—Without a doubt the most frequented ocean route from the United Kingdom to New York and the other ports of the United States is from Liverpool. The *Atlantic Transport* Company lines of steamers sail from the Royal Albert Docks, London, weekly for New York; several lines, including the *American* line, make Southampton Docks their starting-point, but by far the greater number of steamships running between this country and New York start from Prince's Landing Stage, Liverpool, calling at Queenstown Harbour for the mail bags. The *Cunard*, *White Star*, and other lines run frequently between Liverpool and New York.

According to Lloyd's Register, twenty-nine regular lines of ocean steamers ply between New York and the ports of Europe. The use of the port of Southampton instead of Liverpool is becoming more common.

**Fishguard**, on the north coast of Pembrokeshire, is now a port of call for steamers from America. The new mail route from London to Queenstown is via *Fishguard* and *Rosslare*, near Wexford.

**Liverpool to Canada.**—There are also several ways of getting from England across the Atlantic to Canada. The *Allan* and *Dominion* lines of steamships run from Liverpool to Quebec and Montreal throughout the summer in about eight days, calling at Moville, on Lough Foyle, in the North of Ireland, for the mails. In winter, when the River St. Lawrence is ice-bound, the steamers make Halifax, Nova Scotia, their Canadian port. The *Canadian Pacific* line to Canada make St. John, New Brunswick, their winter port.

**Routes from England to India.**—Until the year 1823, the only route to India was by way of the Cape of Good Hope; and the old-fashioned Indiamen, in which the voyage was made, called and took in provisions at St. Helena, the Cape of Good Hope, and half a dozen other harbours besides. Commerce was subjected to all the thousand drawbacks of time and distance. No advices from Indian markets could reach the London merchants interested under five or six months from the date of the letter. Hence trade was extremely risky; and this fact tended to limit commercial intercourse with India, and to check the development of her resources. These disadvantages were painfully felt at home, but they were still more painfully felt by the Anglo-Indians themselves.

The first "near cut" to England was adopted about the year 1840. A ship carrying mails and passengers steamed from *Bombay* to *Aden*, near the point where the Red Sea opens into the Indian Ocean, and along the whole length of the Red Sea to Suez, where she discharged her mails and passengers to travel overland from Suez to Alexandria. Here, another ship waited to carry them to Malta, and thence to England. The advantages of this route were realised at once, merchants sent and received by it letters, money, samples, and small parcels of sufficient value to bear the heavy cost of transport.



The construction of the *Suez Canal* was the next step to render intercourse between east and west easier still. This important engineering work, which was completed in 1869, runs from *Port Said*, on the Mediterranean to *Suez*, on the Red Sea, passing through Lake Menzaleh, Lake Timsah, and the Bitter Lakes.

India can now be reached from London, Liverpool, or Southampton. The *Peninsular and Oriental* (P. & O.) mail steamers sail from the Royal Albert Docks, London, through the Suez Canal for *Bombay*, *Colombo*, *Madras*, *Calcutta*, and *Singapore*, touching at Gibraltar, Malta, and Brindisi, *en route*. The steamships of the *Orient Line* also run to the same ports, calling at Plymouth and Naples. The *Anchor*, *Bibby*, *Clan*, *Ellerman*, and other lines of steamers, start from Glasgow and Liverpool for the voyage to India.

Routes from England to Australasia.—Several lines of steamers depart from British ports to Australia; and there are three principal routes.

1. That by the *Suez Canal*, which should be avoided between the middle of May and the middle of September, as the Red Sea is then so very hot. Persons leaving this country for Australia during the summer months should go either by the Cape of Good Hope or else cross the Atlantic Ocean to Canada, cross America by the Canadian-Pacific Railroad, and reach Australia by sailing across the wide Pacific Ocean, in one of the steamships of the Canadian-Australian line.

As far as Aden, the *Suez Canal* route is the same as that to India; but then the steamers bound for Australia call at Colombo, and cross the Indian Ocean to King George's Sound, where the mails for Western Australia are landed. The remainder of the mails are put ashore at Adelaide, the capital of South Australia, and from thence forwarded by rail to their destinations.

2. The New Zealand steamers and some of the Australian ones make the passage round the *Cape of Good Hope*; many of these vessels call at Madeira and Teneriffe. They then proceed on their southward way, occasionally calling at either Ascension or St. Helena, and so reach the Cape of Good Hope. Leaving the Cape, the vessels pass into high southern latitudes, working as far south as the weather

permits to take advantage of the westerly winds which blow steadily in these latitudes, and also in order to get the shortest route.

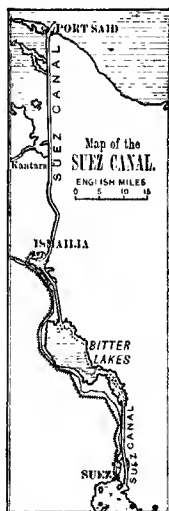
The long sea voyage back to England generally takes a different route from the one just mentioned, running by way of Cape Horn. Having called at King George's Sound and Adelaide, the steamers proceed to *Hobart*, the capital of Tasmania. They then make the passage of eleven hundred miles to *Wellington*, the capital of New Zealand.

After leaving New Zealand, no more land is seen until the steamer passes round Cape Horn and touches at the *Falkland Islands*, another outlying British colony. Then a call is made at *Rio de Janeiro*, the most beautiful city of South America. The vessel crosses the Atlantic Ocean to the Canary Isles, returning home by the Bay of Biscay and the English Channel.

3. The Canadian route, although rather more expensive than either of the others, is the best one during the English summer, since it avoids the heat of the Red Sea, and also the cold weather which is always met with between the Cape of Good Hope and the Australian coast.

The route across the Atlantic can be taken by the steamers of any line, as may be arranged. From about the middle of November to the first of May, while the River Saint Lawrence is blocked by ice, these steamers land their passengers at *Halifax*, Nova Scotia and *St. John*, New Brunswick, the Canadian winter ports. During the remainder of the year, passengers can be carried to *Quebec* or *Montreal*.

The *Canadian Pacific Railway* runs across the Dominion of Canada to *Vancouver City* on the Pacific Ocean, where one of the steamers of the Canadian-Australian Line is waiting to cross the Pacific Ocean. After a voyage of about a week, the steamer arrives at *Honolulu*, the capital of the Sandwich Islands, whence a seven or eight days' sail suffices to reach the Fiji Islands.



A run of about six days takes the vessel over the eighteen hundred miles of ocean which lie between the Fiji Islands and *Port Jackson*, the harbour of *Sydney*, one of the most beautiful havens in the world.

**The Voyage from England to the Cape.**—One of the splendid *Union-Castle* steamships leaves the East India Dock Basin, at Blackwall, London, every Friday, bound for the Cape of Good Hope. The steamers of this line reach *Southampton* on Saturday; they also call at *Madeira* one week, *Grand Canary* the following week, and so on. The *Union-Castle* Royal Mail vessels leave Southampton Docks for the Cape every Saturday; but these ships call at Madeira on every voyage; steamships also visit Saint Helena and Ascension at intervals.

Leaving the English Channel, the Cape steamers turn southward, and steam outside the Bay of Biscay into the deep, violet-coloured waters of the Atlantic Ocean, passing between the Azores and the Canaries, until, about five days out from Southampton, the vessels call at Teneriffe, one of the Canary Islands. After Teneriffe sinks below the horizon, the weather is generally very hot; and from fifteen to twenty days out they anchor off Capetown.

## CHAPTER XV.

### THE BRITISH EMPIRE.

ACCORDING to the latest returns available, it appears that the British Empire includes more than one-fifth of all the land on the face of the earth, and over one-fourth of the total population of the globe. Including the United Kingdom of Great Britain and Ireland, the Empire of India with her Feudatory States, the Colonies great and small, Protectorates such as Egypt and the Soudan, and spheres of influence such as Afghanistan, the **area of the British Empire** is over twelve millions of square miles, and its **population** amounts to about *four hundred and forty millions*, as shown in the following table:—

TABLE OF THE BRITISH EMPIRE AT HOME  
AND ABROAD.

Possession.	Area, sq.m.	Pop.	Imports.	Exports.
<b>In Europe.</b>				
United Kingdom and adjacent Islands ..	121,633	46,000,000	1,319,339,000	529,429,000
Gibraltar .. ..	2	16,500	—	—
Maltese Islands ..	118	224,500	2,874,000	610,000
<b>In Asia.</b>				
Indian Empire ..	1,802,629	244,267,000	109,570,000	163,263,000
Ceylon .. ..	25,481	4,623,000	12,343,000	20,463,000
Cyprus .. ..	3,584	300,000	978,000	721,000
Aden and Perim ..	10,387	60,000	4,527,000	8,605,000
Straits Settlements ..	1,600	821,000	73,887,000	72,307,000

Possession.	Area, sq.m.	Pop.	Imports.	Exports.
<i>Asia (continued).</i>				
Federated Malay States .. ..	27,506	1,037,000	8,547,000	31,736,000
Hong Kong, Kowloon, Lantao, etc. ..	391	535,000	—	—
British North Borneo	77,106	840,000	1,417,000	2,179,000
Brunei .. ..				
Sarawak .. ..				
Wei-hai-wei .. ..	285	150,000	—	—
Sokotra .. ..	1,382	12,000	—	—
Kuria Muria Is. ..	—	—	—	—
Bahrein Is. .. ..	200	105,000	1,607,049	817,243
Andaman and Nicobar Is. ..	3,143	26,469	—	—
<i>In Africa.</i>				
Egypt .. ..	350,000	12,710,000	51,766,000	45,376,000
Anglo-Egyptian Soudan .. ..	1,014,000	3,400,000	3,102,000	3,491,000
Union of South Africa.	Cape Province	276,966	48,956,000	33,728,000
	Natal .. ..	35,291		
	Orange Free State .. ..	50,389		
	Transvaal .. ..	110,450		
Basutoland .. ..	11,716	406,000	—	—
Bechuanaland Protectorate .. ..	275,000	125,000	—	—
Rhodesia .. ..	440,000	1,690,000	—	—
<i>The East Africa.</i>				
British East Africa.	Protectorate	246,800	—	785,000
	The Uganda Protectorate	109,119	1,760,000	1,849,000
	The Zanzibar Protectorate	1,020	200,000	157,000
			354,000	

Possession.		Area, sq.m.	Pop.	Imports.	Exports.
<i>Africa (continued).</i>					
The South-West Africa					•
West Africa.	Protectorate ..	322,000	14,830	909,779	1,422,844
	Nigeria ..	336,000	16,500,000	7,533,000	8,728,000
	Gold Coast Colony, Ashanti, etc. ..	80,000	1,500,000	3,386,000	6,365,000
	Sierra Leone with Protectorate	31,000	1,400,000	1,333,000	1,498,000
	Gambia with Protectorate	4,500	208,000	992,000	1,047,000
Somaliland					
	Protectorate ..	68,000	300,000	283,000	206,000
Mauritius ..		809	385,000	2,813,000	4,128,000
St. Helena ..		47	3,600	51,000	55,000
Ascension		34	200	—	—
Nyasaland					
	Protectorate ..	39,573	1,140,000	354,000	157,000
Seychelles ..		156	25,000	88,000	90,000 •
Swaziland ..		6,678	100,000	—	—
In Australasia.					
Commonwealth of Australia.	New South Wales ..	309,432	1,897,084	60,363,000	75,039,000
	Victoria ..	87,884	1,416,982		
	Queensland ..	670,500	705,588		
	South Australia ..	380,070	439,275		
	Western Australia ..	975,920	311,121	•	•
	Tasmania ..	26,215	202,842		
	New Zealand ..	104,751	1,170,000	20,742,000	30,613,000
Fiji Islands ..		7,083	166,000	1,011,000	2,668,000
Territory of Papua ..		90,540	200,000	284,000	221,000 •

Possession. §		Area, sq. m.	Pop.	Imports.	Exports
<i>Australasia (continued)</i>					
Pacific Islands.	Tonga (Friendly Islands) ..	250	23,766	114,250	123,76
	British Solomon Islands ..	11,000	810,000	154,743	149,74
	Gilbert and Ellice Is. ..	180	32,000	122,396	176,91
	<i>In America.</i>				
	Dominion of Canada	3,729,665	8,360,000	197,856,000	326,046,00
	Newfoundland ..	162,734	257,000	5,528,000	6,198,00
	Labrador ..				
British West Indies.	Bahamas ..	4,404	60,000	494,000	402,00
	Leeward Islands	715	128,000	902,000	1,095,00
	Windward Islands ..	516	178,000	893,000	922,00
	Barbados ..	166	187,000	2,285,000	2,190,00
	Trinidad and Tobago ..	1,974	377,000	4,790,000	5,309,00
	Jamaica, etc. ..	4,520	905,000	3,362,000	2,529,00
	Bermudas ..	19	22,000	674,000	208,00
	British Honduras ..	8,598	43,000	575,000	550,00
	British Guiana ..	89,500	314,000	3,271,000	4,316,00
	Falkland Islands ..	7,500	3,240	1,257,000	1,871,00

# PITMAN'S COMMERCIAL GEOGRAPHY.

## BOOK II.

### THE BRITISH EMPIRE ABROAD.

#### CHAPTER I.

##### NAVAL AND MILITARY STATIONS.

**British Possessions.**—It is estimated that the British Dominions beyond the seas include more than one-fifth of the land on the face of the earth, and over one-fourth of the total population of the globe. Including every piece of land over which we have any claim—the Mother Country, India and her Feudatory States, the Colonies great and small, Protectorates, and spheres of influence—the *area of the empire is over twelve millions of square miles*. On this enormous area there live and work over *four hundred and forty millions of people*, embracing every type of humanity under the sun, of whom sixty millions are of English speech and race.

British possessions may be classed under three heads :—

1. Naval and Military Stations ;
2. Self-governing Dominions and Crown Colonies.
3. Protectorates and Subject Countries.

Our naval and military stations abroad are ports of supply and repair, both for the navy and for the commercial marine of the British Empire. Some of these stations are *fortified posts* at strategic points, available in time of war for shelter, coaling, and provisioning. Others are so situated as *to secure British control of passing trade*. All of them are at convenient points on the great ocean trade routes.



The principal naval and military stations in the Atlantic Ocean are those of the *Bermudas*, the *Bahamas*, *Barbados*, the *Falkland Islands*, and the island of *Ascension*.

**The Bermudas.**—The Bermudas are a group of more than one hundred islands and islets, about six hundred miles to the east of the coast of the United States. Only twenty of the islands are inhabited, and on these the soil is thin. The more important are *Bermuda*, *St. George*, *Ireland Island*, *Somerset*, and *St. David's*. There are no fresh-water streams, and the wells being poor, the water supply depends on the rainfall. The *area under cultivation* is about four thousand acres. The principal *crops* are onions and potatoes, and most of the trade is with the port of New York. These islands are of value to the United Kingdom as a naval and military station. The military barracks are at *St. George*, on the island of the same name. At *Hamilton*, on Great Bermuda Island, are the docks, ship-yards and store-houses of the naval establishment. A *submarine telegraph cable* connects these islands with Halifax, Nova Scotia.

**The Bahamas.**—The Bahamas are an extensive group of islands lying to the east of Florida Channel. Only twenty of them are inhabited, and these yield *tropical fruits*, *sponges*, and *cabinet woods*. The chief fruits cultivated are *pine-apples*, *bananas*, *oranges*, *lemons*, *figs*, and *olives*, which are chiefly exported to the United States. The chief *timber trees* of the Bahamas are *mahogany*, *lignum-vitæ*, *mastic*, *iron-wood*, *ebony*, *log-wood*, and *satin-wood*. The imports are *food*, *clothing*, and *hardware*. *Sisal hemp* and other fibre plants have lately been introduced, and about thirty thousand acres are under fibre culture. *Nassau*, the capital, on the island of New Providence, has a good harbour, and is the only considerable town in the Bahamas. The *military garrison* is stationed here.

**Barbados.**—Barbados is the most easterly of the West India islands, and Bridgetown, its capital, is a station of the West Indies and Panama Telegraph Company, as well as the military headquarters of the British West Indies. The island has a population of one hundred and eighty thousand, and has become the central market for the other Windward Islands—*St. Lucia*, *St. Vincent*, *Grenada*, and *Tobago*. The principal produce of all the islands of this group is *sugar* for the American,

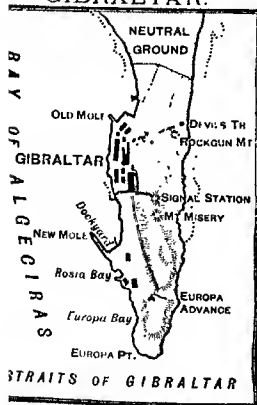
and English markets ; and nine-tenths of the dense population are negroes.

**The Falkland Islands.**—The Falkland Islands, situated about three hundred miles east of the Strait of Magellan, have a scanty population of Europeans. Although the *climate* is damp and cheerless, *wool* of fine quality is exported ; it is the chief commercial product. At *Port Stanley*, the only important settlement, there are ship-yards for the repair of vessels sailing round Cape Horn or through the Strait of Magellan.

**Ascension Island.**—Ascension is a station of the British West African naval squadron, and is resorted to by merchant ships trading to South America and the settlements on the west coast of Africa. It now possesses a steam factory, naval yards, and a *coaling depôt*. It has been strongly fortified. *Georgetown* is the capital.

**St. Helena.**—St. Helena, once a very important station, has been declining since the Suez Canal afforded a new and shorter route for steam navigation between Europe and the East. *Jamestown*, the only considerable place in the island, is a port of call for sailing ships which follow the old route round the Cape of Good Hope. Its strategic importance

GIBRALTAR.



STRAITS OF GIBRALTAR.

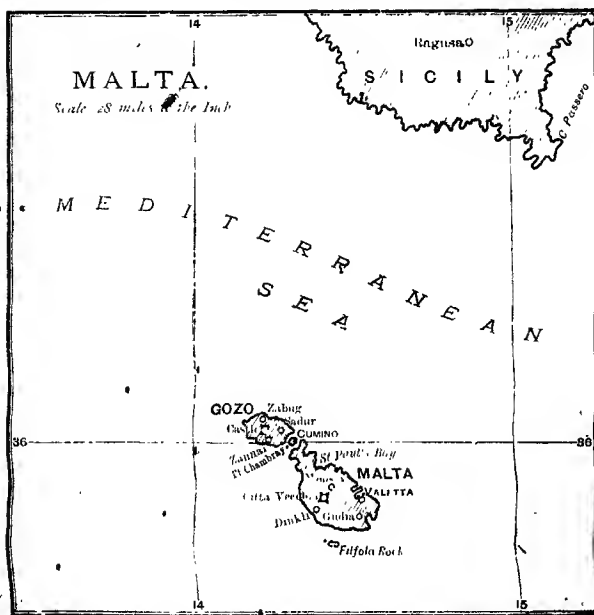


as a *coaling-station* for the British navy has, however, lately been recognised, and modern fortifications, with heavy guns, have recently been constructed by the Imperial government.

In the **Mediterranean** the United Kingdom has the two important stations of *Gibraltar* and *Malta*.

**Gibraltar.**—Gibraltar is a fortified rocky promontory, projecting into the Mediterranean from the south of Spain. The town of the same name is situated on a bay to the west of the fortress, and is a *coaling-station* as well as a place of call for ships passing through the adjacent strait. An enclosed harbour, with three graving docks capable of accommodating the largest battleships of the British navy, has been built recently at a cost of over four millions sterling. The *garrison* numbers about six thousand men.

**Malta.**—Malta is the largest island of a group of three



principal and many small ones situated about sixty miles south of Sicily, having numerous safe harbours. The population, which is mainly of Arab descent, numbers two hundred and twenty thousand. *Valetta*, the chief town, is, for half the year, the *station of the British Mediterranean fleet*. It is strongly fortified. Here are extensive *grain stores* and a *naval hospital*; for Malta is the most important *coaling and supply station* on the route to the East. The garrison is nearly twice as strong as that of Gibraltar.

The colony includes the adjoining islands of *Gozo* and *Cumino*, as well as several islets, all of which are densely populated and highly cultivated. The chief products are *oranges, melons, cummin-seed, onions*, and early *potatoes* for the London market.

In Asia the British have the four valuable stations of *Aden, Singapore, Hong Kong, and Wei-hai-wei*.

**Aden.**—Aden is a peninsula on the south coast of Arabia, on the Gulf of Aden, about one hundred miles east of the Strait of Bab-el-Mandeb. The harbour is excellent and the place is strongly fortified and garrisoned. Aden is a portion of British India and the emporium of the whole trade of southern Arabia. It is also the centre of the British Protectorate over the neighbouring Arab tribes, while politically dependent upon Aden are the *Kuria Muria Islands*, valuable for their guano, and the protected island of *Socotra*. *Dates* and *coffee* are exported, and an immense trade in cotton goods, coal, grain, sugar, and hides is carried on with neighbouring countries.

**Singapore.**—Singapore, the capital of what is known as the *Straits Settlements*, is situated on an island at the eastern extremity of the Straits of Malacca. The city has a population of over three hundred thousand, consisting mainly of Chinese and Malays. The excellent *harbour* may be approached from either direction without pilots, and the city has a sea frontage of six miles. Singapore has a fine system of docks, wharves, dry-docks, and warehouses. Owing to advantages of situation, the *trade* with neighbouring British possessions and in transit has a vast annual value, amounting to over seventy millions sterling. As a *naval and military station*, Singapore is protected by a citadel and numerous fine batteries, while the neighbouring island of *Penang* is a great *coaling*

*station.* The *exports* of Singapore include all kinds of tropical produce and tin from the neighbouring settlements. *Labuan* is now attached to Singapore.

**Hong Kong.**—Hong Kong, formerly belonging to China, is an island in the Canton estuary. The population numbers about five hundred and ten thousand souls, ninety-five per cent. of whom are Chinese. Its splendid harbour is a *naval station*, and the island has a strong garrison of Sepoy and British regiments. Hong Kong is one of the greatest coaling-stations in the world, and has steamship communication with Europe, Australia, and the United States. Owing to its excellent situation, it commands the foreign commerce of Southern China, the actual export trade of the settlement being four millions sterling annually. The great *articles of export* are *tea* and *silk*; of *import*, *cotton goods*, *coal*, *iron*, and *steel*.

**Wei-hai-wei.**—This territory was leased to Great Britain by China in 1898. It is situated on the Shantung Promontory at the entrance to the Gulf of Pechili, nearly opposite Port Arthur. The climate is excellent, and the large harbour is sheltered and spacious. The territory includes a 19-mile belt of land all round the bay, besides the island of Liukung. The population is about 150,000. The seat of administration is Port Edward, on the mainland.

## CHAPTER II.

### CANADA AND NEWFOUNDLAND.

**Definition of British Colonies.**—British Colonies are countries which have been peopled, either wholly or very largely, by emigrants from the United Kingdom. Several British Colonies are self-supporting and virtually independent of the Mother Country except as regards their relations with Foreign Powers, though their governors are appointed by the British Ministry; these are now usually spoken of as the Overseas Dominions, the term “colony” being much restricted. As might be expected, a large share of their commerce is carried on with the United Kingdom.

The British Colonies, using the term in its proper sense, as here defined, are :—

1. The *Dominion of Canada.*
2. *Newfoundland.*
3. The *Commonwealth of Australia.*
4. The *Dominion of New Zealand.*
5. The *Union of South Africa.*

#### THE DOMINION OF CANADA.

**Provinces, etc.**—The Dominion of Canada includes the whole of North America to the north of the United States, except Alaska on the north-west, and Greenland on the north-east. It consists of nine provinces and several territories, and its total area is 3,603,910 square miles.

#### I. The Nine Provinces.

PROVINCE.	AREA, SQ. M.	POPULATION.	CAPITAL.
Nova Scotia	21,000	492,000	Halifax (47).
Prince Edward Isl'nd.	2,000	93,000	Charlottetown (12).
New Brunswick	28,000	351,000	Fredericton (7).
Quebec	690,000	2,000,000	Quebec (78).
Ontario	366,000	2,500,000	Toronto (376).
Manitoba	232,000	455,000	Winnipeg (136).
British Columbia	353,000	392,000	Victoria (31).
Alberta	252,000	375,000	Edmonton (54).
Saskatchewan	243,000	492,000	Regina (30).

## II. Territories.

The Nine Provisional Districts into which the old North-West and North-East Territories were divided may now be mentioned, beginning at the west and going eastward.

Yukon includes the *Klondyke Region*, with its rich gold-fields round *Dawson*.

Mackenzie occupies all the lower part of the basin of the river bearing the same name.

Athabasca lies to the south of Mackenzie; Keewatin includes the land to the west, and Ungava lies to the east of Hudson Bay. Franklin includes all the icy islands in the Arctic Ocean to the north of the Dominion. All the above, with the exception of a portion of the Yukon, are the domains of the hunter and trapper.

To the south of Athabasca lay three other districts, *Alberta*, *Saskatchewan*, and *Assiniboia*. The settlement of these three districts had been proceeding satisfactorily when, in 1905, their boundaries were re-arranged, and *Alberta* and *Saskatchewan* were created provinces. The two new provinces have absorbed the districts formerly known as *Assiniboia* and *Athabasca*. By Federal Act, passed in 1912, the boundaries of Quebec, Ontario and Manitoba were extended at the expense of the North West Provinces.

**Configuration.**—From a physical point of view, the Dominion of Canada may be divided into an eastern and a western division, the Red River Valley forming the line of separation.

The Eastern Division consists of three distinct areas:—

1. The south-eastern portion, stretching along the southern shore of the Gulf and River St. Lawrence, and running southward to Lake Champlain, is generally hilly, with some fine stretches of arable and pastoral lands.

2. The southern and western area, a broad, level, and slightly undulating expanse of generally fertile country, the chief feature of which is the chain of great lakes.

LAKE.	AREA.	DEPTH.	HEIGHT ABOVE SEA-LEVEL.
Superior	32,000 sq. m.	900 feet.	600 feet.
Huron	23,000 "	450 "	580 "
Michigan	23,000 "	900 "	580 "
Erie	8,000 "	250 "	560 "
Ontario	7,000 "	500 "	230 "

3. The northern area, embracing nearly two-thirds of the Dominion, with an average elevation of one thousand feet above the level of the sea, presenting a region of water-ways, and including the great *Laurentian Mountain Range*, a series of very ancient water and ice-worn heights. In this area are the two great river systems of the *Saskatchewan-Nelson* and *Mackenzie*, with their numerous lakes.

LAKE.	AREA.	POSITION.
Athabasca . .	10,000 square miles.	} In the basin of the <i>Mackenzie</i> .
Great Slave . .	14,000 " "	
Great Bear . .	14,000 " "	
Winnipeg . .	12,000 " "	} In the <i>Saskatchewan-Nelson</i> river.
Winnipegosis . .	6,000 " "	
Manitoba . .		

The Western Division comprises two districts equally distinct in character :—

1. The great *Prairie Region*, reaching from the Red River Valley to the foot-hills of the Rocky Mountains, rising to the west in three terraces.

2. The great *Western Highlands*, bounded on the east by the Rockies and on the west by the Cascade Mountains.

**Population.**—The population of Canada numbers over seven millions, eleven-twelfths of whom live in the eastern provinces between the great lakes and the Atlantic coast. The inhabited parts of Canada at present include only one-tenth of the total area of the Dominion.

**Productions.**—The natural resources of the Dominion, although very great, are not fully developed, because most Canadian products are shut out by duties from their natural markets in the United States, with which country it does most of its trade however, but trade with the Mother Country is on the increase, and is being fostered by both Governments. An area, larger than that of England, is devoted to crops, chiefly *wheat*, *barley*, and *oats*. Much more is pasture land for *cattle-rearing* and *dairy-farming*. The forests of Canada are of vast extent, and the *timber*, chiefly pine, is one of the most valuable of Canadian products. The principal lumbering area lies to the north of the River St. Lawrence, to which the felled timber is floated down the



many tributaries. The fisheries rank next in importance, the produce being worth about ten millions sterling annually. The *cod* of the Atlantic fisheries, and the *salmon* of the Pacific rivers, are the most valuable kinds caught. The most important of the minerals is *coal*; *silver* is being produced in rapidly increasing quantities near Sudbury; *copper* and *nickel* are mined; and *gold* is found in large quantities in the basin of the Yukon, where *Dawson*, a town of recent growth, is the chief centre.

**Commerce.**—The principal manufactures of Canada are those of her own products, *grain*, *forest products*, *cheese* and *leather*.

The commerce of Canada is mainly with the Mother Country and the United States, which now does more than the United Kingdom. The principal exports are *forest products*, *cheese*, *cattle*, *fish*, *bacon* and *hams*. The leading imports are *iron goods*, *wool*, *coal* and *sugar*, the last two being imported from the United States.

The principal articles of trade between Canada and the Mother Country are as follows:—

The Exports from Canada to the United Kingdom, which annually amount to over fifty-five millions sterling, consist chiefly of the following articles:—

	Millions £		Millions £
Wood and Timber	.. 1½	Bacon and Ham	.. 11½
Corn and Meal	.. 27	Fish	.. 2
Cheese	.. 11½	Skins, Furs, and Leather	½
Beef	.. 1½	Apples and Fruits	.. ½

The Imports to Canada from the United Kingdom, which annually amount to less than a quarter the exports, consist chiefly of:—

	Millions £		Millions £
Woollen Goods	.. 4½	Ironwork	.. ½
Cotton Goods	.. 3½	Clothing and Hats	.. ½

**Merchant Fleet.**—The Dominion of Canada has a larger merchant fleet than any other British Colony, including the *Canadian Pacific Railway Line* of steamships, which runs from Vancouver, B.C., to Japan and China, calling at *Yokohama*, *Shanghai*, and *Hong Kong*, carrying the British mails; the *Canadian Australian Line*, which, starting from Vancouver, B.C., communicates with *Hawaii*, *Fiji*, *New Zealand*;

and *Australia*; the *Canadian Pacific Railway Line* from Liverpool to St. John, N.B., or Montreal, according to the season; and the *Allan Line* to Quebec, Montreal, Halifax, and St. John, N.B., from Liverpool, Glasgow, London, and Havre.

**Railways and Canals.**—The chief railway lines are the *Canadian Pacific*, the *Grand Trunk*, the *Canadian Northern*, the *Intercolonial*, the *National Transcontinental*, and the *Grand Trunk Pacific*.

The *Grand Trunk Railway* forms a continuous line through the provinces of Ontario and Quebec. The eastern extremities of the line are *Quebec* and *Portland* (Maine, U.S.), and it extends westward to Detroit and Chicago. It supplies the means of communication with *Montreal*, *Toronto*, *Hamilton*, *Niagara*, and all the principal towns in the provinces of Quebec and Ontario.

The *Canadian Pacific Railway* stretches across the entire continent from Montreal to Vancouver, B.C., a distance of nearly three thousand miles. The chief places on this line are shown in the maps on pages 144 and 145.

The *Grand Trunk Pacific*, completed in 1914 takes a more northerly route than the *Canadian Pacific Railway* in order to open up new country. The chief places on the line, which runs from *Quebec*, are *Winnipeg*, *Edmonton*, the *Yellowhead Pass* over the *Rockies*, and *Prince Rupert* on the *Pacific Coast*. This town became more important with the opening of the *Panama Canal*.

The *Sault Ste Marie* or "*Soo*" *Canal* avoids the rapids between *Superior* and *Huron*.

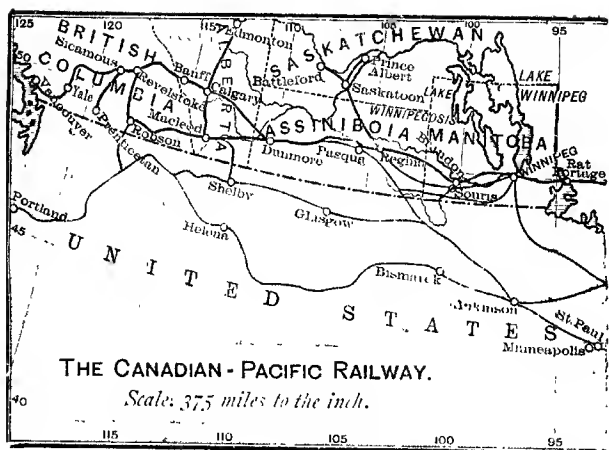
The *Welland Canal* avoids the *Niagara Falls*.

The *Rideau Canal* connects *Ottawa* and *Kingston*.

The *Georgian Bay Canal*, recently constructed, follows the *River Ottawa* from Montreal to near *Lake Nipissing*, and then through that lake to *Georgian Bay*, the eastern arm of *Huron*.

#### THE PROVINCES.

**Nova Scotia.**—*Nova Scotia*, including the peninsula of that name and the *Island of Cape Breton* to the north-east of it, is about two-thirds the size of *Scotland*, and has a population somewhat larger than *Sheffield*. In the northern part of the province are rich deposits of *coal*. Having many

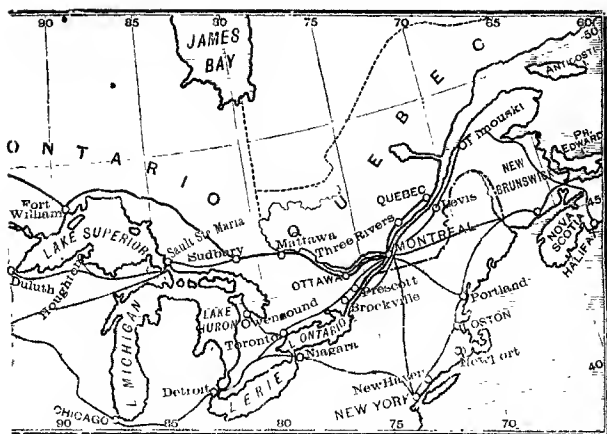


fine natural harbours, *ship-building* and the *fisheries* are the two principal industries, and most of the Canadian export of fish is from this province.

The only large town in Nova Scotia is **Halifax**, the capital, with a population about half as great as its namesake in England. As a seaport it ranks third in the Dominion, being seldom closed by ice. **Halifax** is a trading, rather than a manufacturing town, but it does some *sugar-refining* and *cotton-spinning*. The splendid *harbour* is defended by forts.

**Prince Edward Island.**—Prince Edward Island, the smallest of the Canadian provinces, is about equal in *area* to the county of Norfolk in England, although it is less than one-fourth as densely populated. It is situated to the south of the Gulf of St. Lawrence, between New Brunswick and Nova Scotia, and is purely agricultural. It is the only part of the Dominion that is fully settled.

**Charlottetown**, on a commodious bay of the south coast, is the capital. It is a little place, having a population about equal to that of Lewes, in Sussex. Some wooden *ship-building* is done here, while *grain*, *potatoes*, and *fish* are exported.



**New Brunswick.**—New Brunswick joins Maine, U.S., on the east. It is nearly as large as Scotland, and has a *population* less than that of Bristol. As this province has a great forest area, the people are engaged in *lumbering*, *ship-building*, and *fishing*.

**Fredericton**, the capital, a small town about ninety miles from the mouth of the St. John River, rather less in size than Hertford, is a centre of the lumber trade.

St. John, the largest place in the province, has a fine harbour on the Bay of Fundy at the mouth of the river of the same name. Its *population* is equal to that of Stockton, and, as its harbour is never closed by ice, its *foreign commerce* ranks next to Halifax among Canadian ports. St. John exports timber, fish, and furs.

Quebec.—Quebec, a province of vast size, most of which is forest and wilderness, occupies the lower part of the basin of the River St. Lawrence. Ungava was annexed in 1912. The chief *natural production* is timber; and the *population*, numbering more than two millions, four-fifths of whom are of French descent, live near the River St. Lawrence and in the region between that river and the boundary of the eastern United States.

Montreal, about twice the size of the port of Liverpool, the largest city of the Dominion of Canada, is situated on an island in the River St. Lawrence at the spot where the Ottawa River flows into it. The river is navigable to this point for ocean steamships, and Montreal has a larger foreign trade than any other Canadian port. The Lachine rapids, just above the city, are avoided by means of the *Lachine Canal*, which also furnishes water-power for the factories of Montreal. The river front is lined for more than a mile with fine docks and wharves.

Quebec, the capital of the province, is situated on the River St. Lawrence, near the head of the estuary. The population of the city is a little smaller than that of Norwich, and the only business of note is the *export of timber*.

Ontario.—The Province of Ontario, about two-thirds the size of Quebec, is nearly twice as large as the United Kingdom. The northern half is a wilderness, and the greater part of the *population* of about two millions and a half occupies the peninsula between Lakes Ontario, Erie, and Huron. The *land* is generally very *fertile*, and the *climate* in the south-western part is warm enough to ripen grapes for making wine.

Toronto, on a fine harbour of the northern shore of Lake Ontario, the capital and chief city of this province, has a population far greater than that of Sheffield. It has great shipping interests on the lakes.

Hamilton, the Birmingham of Canada, at the western extremity of the same lake, has a population greater than that of St. Helens in Lancashire.

Ottawa, the seat of the Dominion Government, is about as large as Hamilton. It is situated on the River Ottawa, about one hundred miles west of Montreal. Like many other river-ports of the Dominion, its principal business is connected with the timber trade.

Manitoba.—Manitoba, a thinly peopled province, as much as twice the *area* of the United Kingdom, has a population of close on half a million. The fertile lands of the Red River basin are well suited for *wheat culture*, and that cereal is the principal product.

Winnipeg, near the lake of the same name, is the capital and chief town. It has grown rapidly and is now the size of

Bolton. It is an important station upon both the Canadian Pacific Railway, and the Grand Trunk Pacific Railway and communicates by river and railway with the neighbouring United States. In recent years more wheat has been marketed there than in any other town in the world.

**British Columbia.**—British Columbia is the name given to a vast western region, nearly twice the area of France, having a few small towns in its south-western part. The total *population* is less than four hundred thousand, but it is increasing rapidly. *Coal* of excellent quality is mined at Nanaimo, on Vancouver Island. There are extensive *forests*, and the *salmon fisheries* are yearly increasing in value.

Victoria, the capital, is a small town with a population of fifty thousand at the south-eastern extremity of Vancouver Island. The fine harbour is a British *naval station*, and the headquarters of the Pacific fishing fleet of the Dominion.

Vancouver, on the mainland opposite Victoria, is the western *terminus of the Canadian-Pacific Railway*. It has a fine harbour, one of the best on the Pacific, and is the port of departure of the Canadian Pacific Railway and Canadian-Australian lines to Japan, China, Australia and New Zealand. The population is now about one hundred thousand, having increased fourfold in ten years.

New Westminster, a little town about the same size as Grantham, was the first capital of British Columbia. • •

Rossland, the third town in the province, owes its importance to the gold-fields.

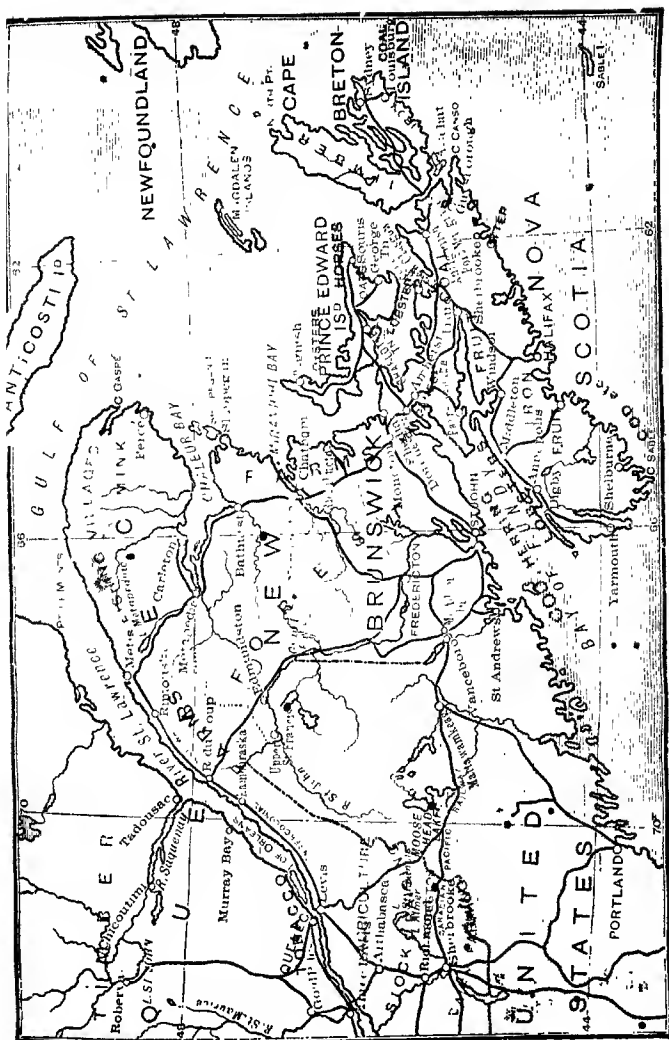
Prince Rupert, near the mouth of the Skeena River, has greatly increased in importance since the completion of the Grand Trunk Pacific Railway and the Panama Canal.

**Alberta.**—Lying east of the Rocky Mountains, and sheltered by that range, is the new province of Alberta, created in 1905. It is a ranching and dairying country, and is also rich in minerals. The present capital is Edmonton.

**Saskatchewan.**—The other new province created in 1905, Saskatchewan, lies between Alberta and Manitoba. It is a rich agricultural country, the soil being peculiarly adapted for wheat-growing. The capital, Regina, has a population of twenty-six thousand.

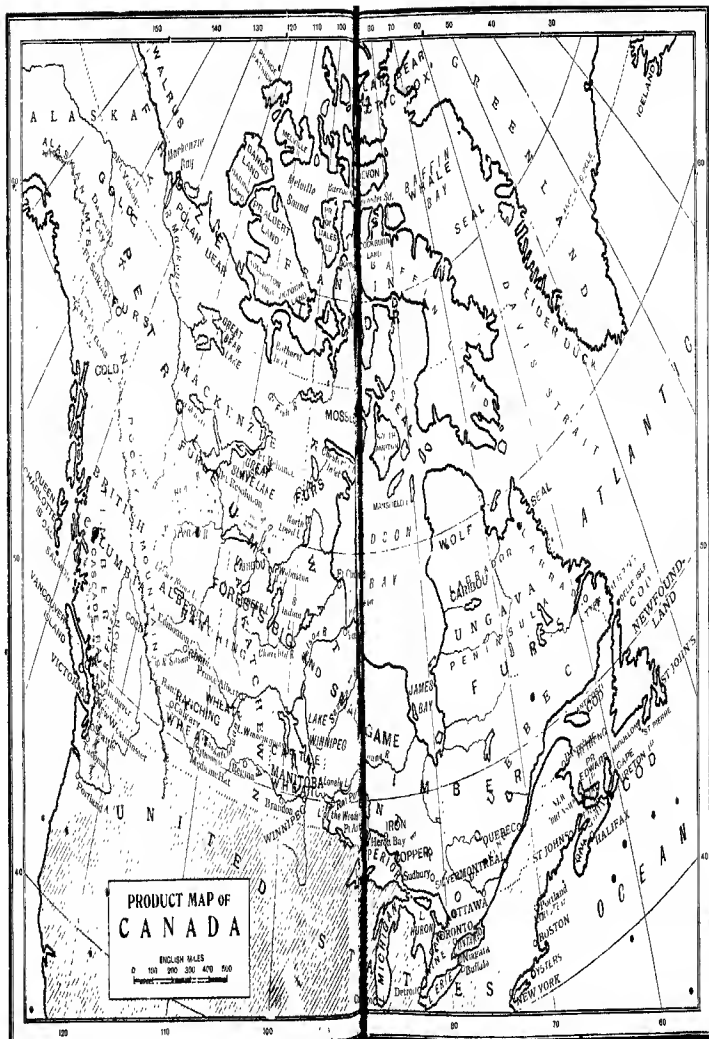
The unsettled Provisional Districts of the north, formerly the North-West and North-East Territories, stretch from the

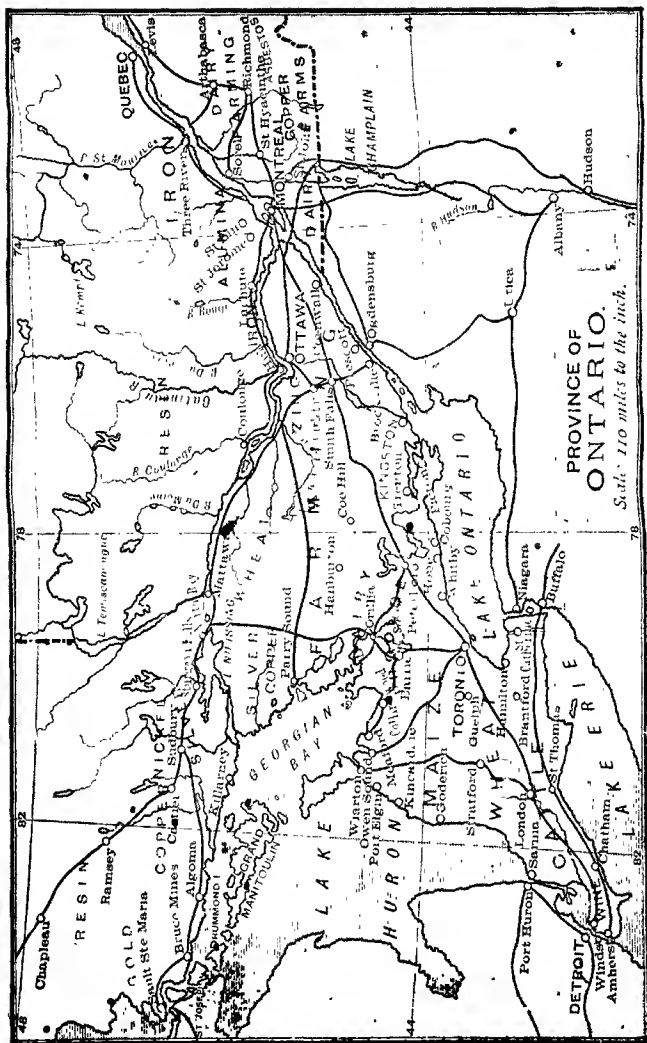




MARITIME PROVINCES OF CANADA.







was cod from the fisheries, for which food and clothing were imported in return.

At Grand Falls and Bishop's Falls there are now extensive paper-mills in operation, and another has been erected at Deer Lake. Most of the paper is exported to England; the wood-pulp and paper exports total nearly £500,000 per annum. This new industry has been developed by the laying of new railways to the centre and north, where magnificent pine forests flourish.

The exports now are:—*Codfish* and *fish oils*, two and a half millions sterling annually; *minerals*, chrome and iron pyrites, £280,000 annually; *sealskins*, to the value of about £80,000; and *tinned lobsters*, worth about £21,000 per year. Much of the commerce of Newfoundland is with the Dominion of Canada, only a small proportion being with the United Kingdom. The total exports to the United Kingdom are now more than a million, the imports being about half a million per annum.

The population is just over two hundred and fifty thousand, nearly all of which is settled in the south-eastern peninsula of Avalon, where there are five or six towns and villages, of which *St. John's*, the largest, is the colonial capital. It has a population of over thirty-three thousand.

• •

## CHAPTER III.

### THE COMMONWEALTH OF AUSTRALIA AND THE DOMINION OF NEW ZEALAND.

#### AUSTRALIA.

**Configuration.**—Australia is a continent singularly different in its *physical features* from any other of the large tracts of land on the earth. With *few mountains and rivers*—the latter either running part of their course underground or disappearing altogether,—with a flora and fauna altogether exceptional, it is yet found tolerably well adapted to European habits, and has been peopled from its antipodes. It has *no mountain axis*, properly so called, and no circlet of mountains, *few permanent lakes*, and scarcely any important rivers. Much of the interior is level.

Large areas are considerably above the sea, though very level; and there are no great contrasts of form, as in other lands, except along the eastern coast. Although once thought inaccessible, and, owing to the absence of navigable streams, almost uninhabitable by civilised man, later explorations and the successful journeys which have been made across the country from sea to sea, tend to prove that the difficulties of reaching and cultivating the interior have been exaggerated, and that settlements will gradually extend backwards, especially from the south and north, until they meet at the almost unknown centre of the island-continent. At any rate, there are no lofty mountains, no large lakes, and no interruptions of desert land to interfere with this result.

**Mountains, etc.**—In the continent of Australia there are no lofty mountain chains. One important system, however, stretches behind the east coast, in a nearly north and south direction. This chain, which is known generally as the *Dividing Range*, nowhere recedes more than one hundred and fifty miles from the coast. Its height varies, in different parts, from two thousand five hundred feet to more than twice that altitude above sea-level; the loftiest point, *Mount Kosciuszko*, is seven thousand three hundred feet high. These mountains are exceedingly wild and rugged, and have numerous

spurs projecting at right angles from the chain, forming dark and almost subterranean gullies, nearly inaccessible, and helping to render the chain much more formidable than far loftier elevations in other countries.

Along the whole of the south and west coasts the land rises immediately to the vast flats of the interior, which rise only across the middle of the country to more than three thousand feet, so that the greater part of Australia west of longitude 135° E. consists of tablelands of moderate elevation. The greater part of the basin of the *Murray-Darling* system is less than six hundred feet above sea-level, while the land around Lake Eyre is actually below.

**Rivers.**—Australia is remarkable for the extreme rarity and small size of its rivers in proportion to the extent of the land. The only one of importance is the *Murray*, with its tributaries, the *Darling*, *Murrumbidgee*, and others. After a tortuous course of sixteen hundred miles, commencing at the west side of the Dividing Range, the combined stream enters the ocean, having drained the south-eastern portion of Australia. It is too shallow for navigation except by small vessels, and a bar at its mouth prevents ocean ships from entering or leaving. In the tropical northern region and on the east coast the rivers flow throughout the year. In the south and interior, however, in the dry season, the *Murray*, fed by the snows of the Australian Alps, is frequently the only one that flows, the others being broken into chains of water holes. On the other hand, when rain is abundant, the low-lying land at the sides of these rivers may be flooded for weeks.

**Lakes.**—The Australian lakes are very large at certain seasons, but one lake is converted into half a score of mere ponds in the dry weather. Originally visited and described by Eyre, the explorer, in the year 1840, *Lake Torrens*, in South Australia, was followed for four hundred miles, and its width was found to vary from fifteen to twenty miles. It is very shallow. It has since been seen broken up into a multitude of pools. Two hundred miles to the south of Lake Torrens is the *Alexandrian Lake*, an expansion of the River Murray, about thirty miles across.

**Climate.**—Being situated chiefly in the south temperate zone, the seasons in Australia occur at opposite times of the

year to ours, midsummer day falling in December, and mid-winter day in June. The north of Australia, lying well within the tropics, has a tropical climate, with well marked wet and dry seasons, the wet season being during the summer months. The seaward side of the eastern mountains is on the track of the S.E. Trade winds and has plenty of rain. Much of the interior, like the corresponding regions on the tropic of Capricorn in South Africa, and the tropic of Cancer in North Africa and Arabia, is practically rainless. The south-west corner of the continent receives most of its rain in the winter months. Tasmania has rainfall throughout the year. In parts of the interior where destructive droughts frequently occur, water for sheep is obtained from artesian wells, and agriculture is being pushed further inland as opportunities for irrigation are utilised. The temperature of the southern parts of the continent is similar to that of the Mediterranean countries of Europe. New Zealand, like Tasmania, lies in the track of the westerly winds, so that, as in Britain, the western side has abundant rain while the east is much drier. These conditions are most marked in South Island, where the damp western sides of the Southern Alps are covered with dense forests and indented by fiords, while to the drier east are the grassy Canterbury Plains.

**Geology.**—Australia, Tasmania and New Zealand exhibit a variety of geological formations, from the old gold-bearing rocks to the most recent gravels and coral reefs. They are especially rich in the useful metals and minerals—*gold, copper, iron, coal, limestone, marble and building stones.*

**Vegetation.**—In the extreme north are tropical forests; on the east sub-tropical and temperate forests. In these latter the characteristic tree is the *Eucalyptus*, of which there are many species—blue gums, iron barks, stringy barks, jarrah, karri, etc. There are also forests, from which the last two are exported, in the south-west corner of Western Australia. Inland from the forest areas are the great grass-lands, passing through scrublands to the arid interior.

All the cultivated plants, the *cereals, fruits, and vegetables*, from the vine, olive, peach, and sugar-cane, down to the humblest garden produce, can be grown to perfection.

**Animals.**—With the exception of the *dingo*, or native dog, there were no mammals in Australia at the time of its

discovery beyond kangaroos, opossums, wombats, and other *marsupial* or pouched quadrupeds.

All the domesticated animals have been introduced by the settlers; to whom the region is also indebted for many of the *song-birds*, useful *insects*, and *fishes* of other countries.

**Population.**—The great island-continent of the southern hemisphere is nearly as large as Canada, but most of the area is at present an arid wilderness. The bulk of the population of more than five millions live in the south-eastern third of the continent, where the surface is somewhat uneven, and where there are several long, shallow rivers.

**Political Divisions.**—The continent is divided politically into five States and two territories, which, with Tasmania, now form the Commonwealth of Australia. Their areas and populations are :—

STATES.	AREA (SQ. MILES).	POPULATION.	CAPITALS.
1. New South Wales	309,460	1,869,084	Sydney (777).
2. Victoria	87,884	1,417,803	Melbourne (708).
3. Queensland	670,500	705,000	Brisbane (173).
4. South Australia	380,070	439,222	Adelaide (225).
5. Western Australia	975,920	318,016	Perth (107).
6. Tasmania	26,215	201,025	Hobart (39).
Northern Territory,	523,620	4,563	Darwin.
Federal Territory	912	1,829	• •
Commonwealth	2,974,581	4,956,542	

About forty miles south-west of Goulburn, N.S.W., a Federal District has been marked out in which is Yass-Canberra, which is to be the new capital of the Commonwealth.

**Commercial Products.**—Nine-tenths of the trade of these colonies is with one another and the Mother Country. Gold, which led to the settlement of the continent, is still mined in most of the colonies, and sheep-farming is almost everywhere followed with the best results. Wool is, in fact, the great staple product of this part of the world. In three or four of the largest coast cities, some of this product is manufactured, but woollen goods are still a valuable import from the United Kingdom.

#### VICTORIA.

Victoria, in the south-east of Australia, the smallest of

the five colonies, is about as large as Great Britain. Its lowland area is divided into two by the Grampians and Australian Alps, which run from west to east. Formerly it was the chief gold-mining region of the continent. Its northern boundary is formed by the River Murray; but in many parts of the colony agriculture is to a considerable extent dependent upon irrigation. The colony owes its prosperity to the *gold-fields*, which were discovered in the year 1851, and have yielded gold to the amount of three hundred millions sterling. The annual value of the output is now about a million. Much attention, however, is being paid to agriculture, grazing and manufacturing. Dams are being built on the rivers to store water for irrigation purposes, and manufactures are encouraged by protective import duties.

The population of more than one and a quarter millions is almost wholly of European, mainly of British, descent. Agriculture and sheep-farming are the leading occupations; wheat is the chief field crop. Manufactures, almost entirely for home consumption, are increasing.

**Commerce.**—The principal exports of Victoria are *gold, wool, live-stock, cereals and butter.*

The imports from the United Kingdom, valued at over twenty millions annually, chiefly consist of *textile fabrics*, nearly half of the total value; *metals* and *metal goods*, including *carriages and cycles*, about four and a half millions sterling; *paper, books, timber, and spirits.*

The exports to the United Kingdom, valued at over seventeen and a half millions sterling annually, consist of *metals* and *grain*, about a third the total amount; *wool*, nearly half the total; the remainder being made up of *butter, leather, skins and tallow.*

**Towns.**—Melbourne, the capital, of marvellous growth and one of the most populous places in the southern hemisphere, is situated on a fine bay of the south coast. This port has railway communication with all the other Australian cities, except those of Western Australia. There are two other towns containing about forty thousand people; these, *Ballarat* and *Bendigo*, are important gold-mining centres.

#### NEW SOUTH WALES.

New South Wales, joining Victoria on the north, has a long coast-line on the eastern sea-board. It is about four



times as large as Victoria, and has a rather larger population. It is the oldest of the five colonies of Australia, having been established about a century ago as a penal settlement. *Sheep-farming* was attempted early in its history, and has become by far the most important industry. The mineral resources of the country, mainly *gold* and *coal*, were developed at the same time that the gold-fields in Victoria were opened. More recently *tin* has been found, and the produce of all mines now ranks next in value to the wool.

The **surface** of the colony includes fertile plains, grazing-lands, forest areas, and mountain regions, so that the products are varied. *Fruits*, *sugar-cane*, and *cereals* are largely cultivated. *Sheep*, *horses*, and other domestic animals are reared, and *minerals* in great variety are mined. The richest *coal-mines* of the continent, in the basin of the Hunter River, near Newcastle, employ ten thousand men.

The principal **exports** are *gold*, *wool*, *coal*, *butter*, and *meat*; and the chief **imports** are *clothing*, *textile fabrics*, and *iron-manufactured goods*.

The **imports from the United Kingdom**, valued at over twenty-seven millions sterling annually, chiefly consist of *textile fabrics* and clothing; *metal goods* and machinery; *beer* and spirits; *paper* and books.

The **exports to the United Kingdom**, valued at nearly thirty-seven millions, chiefly consist of *wool* and other products of flocks and herds, including *mutton* and *meat extract*, which amount to considerably more than half of the total; *gold*, including specie; *copper* and *lead*.

**Sydney**, the capital and commercial centre, has over three-quarters of a million people. Its fine *harbour*, deep and spacious, is the chief *naval station* in Australia for the British fleet. With an abundance of coal, the city is fast becoming an important industrial centre. From its geographical situation, it controls the commerce of the South Pacific Ocean, and is connected by steamship lines with Europe, Asia, and the United States.

Direct *steamship communication* is established with England and the continent of Europe by means of the Peninsular and Oriental, Orient, Messageries Maritimes, White Star, Ellerman, Ocean, and other lines. There is a weekly mail from London.

Newcastle, on the Hunter River, has come into commercial importance on account of its *coal*, which is shipped, not only to all parts of Australia, but also to San Francisco, South America, the Hawaiian Islands, and other parts of the Pacific.

Broken Hill, in the extreme west, a town of recent growth, is in the centre of the silver mining industry.

Other important towns are Parramatta, Goulburn, and Bathurst. The new Federal Capital, at Canberra, an area of 940 square miles, is still under construction; meanwhile the seat of government is at Melbourne.

### QUEENSLAND.

Queensland, situated to the north of New South Wales, occupies the north-eastern part of Australia. Its *population*, of more than half a million is chiefly settled along the eastern coast plain. The *area* of the whole colony is more than five and a half times that of the United Kingdom. Half this immense stretch of country is *forest*, covered with fine, hard building-timber. *Sheep-farming*, *cattle-rearing*, the culture of *maize*, the *sugar-cane*, *coffee*, and *rice*, and the mining of *gold*, *copper* and *tin* are important occupations. Much of the export trade of Queensland goes to market by way of Sydney and Melbourne. The chief exports are *gold*, *silver*, *copper*, *tin*, *coal*, *meat* and *hides*; *bread-stuffs* and *clothing* being imported in exchange.

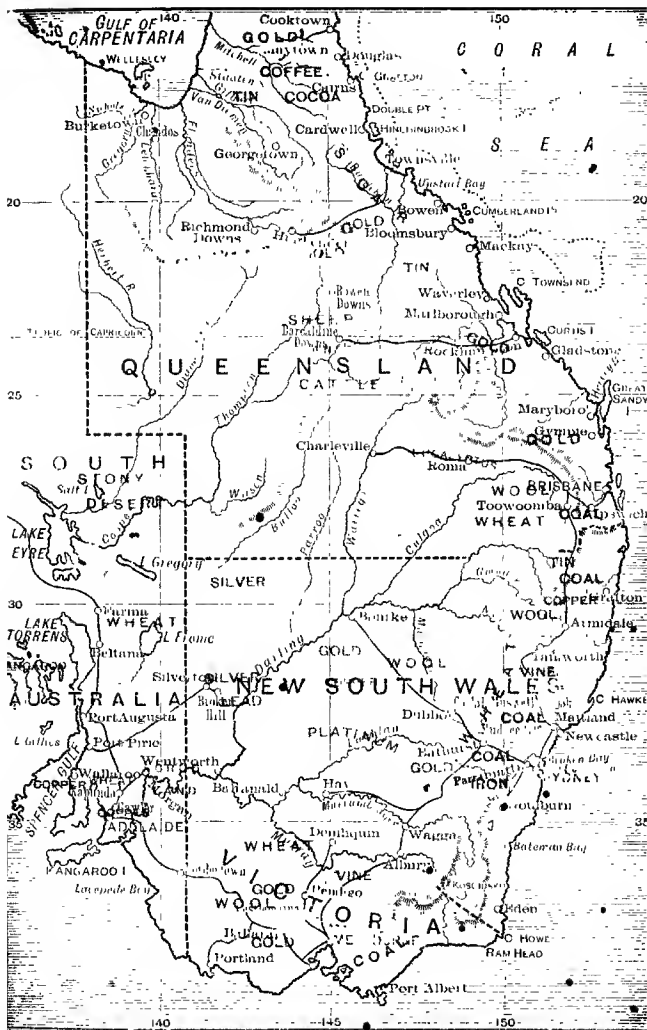
The imports from the United Kingdom, valued at over five millions sterling annually, consist chiefly of *clothing* and *metal goods* of all kinds.

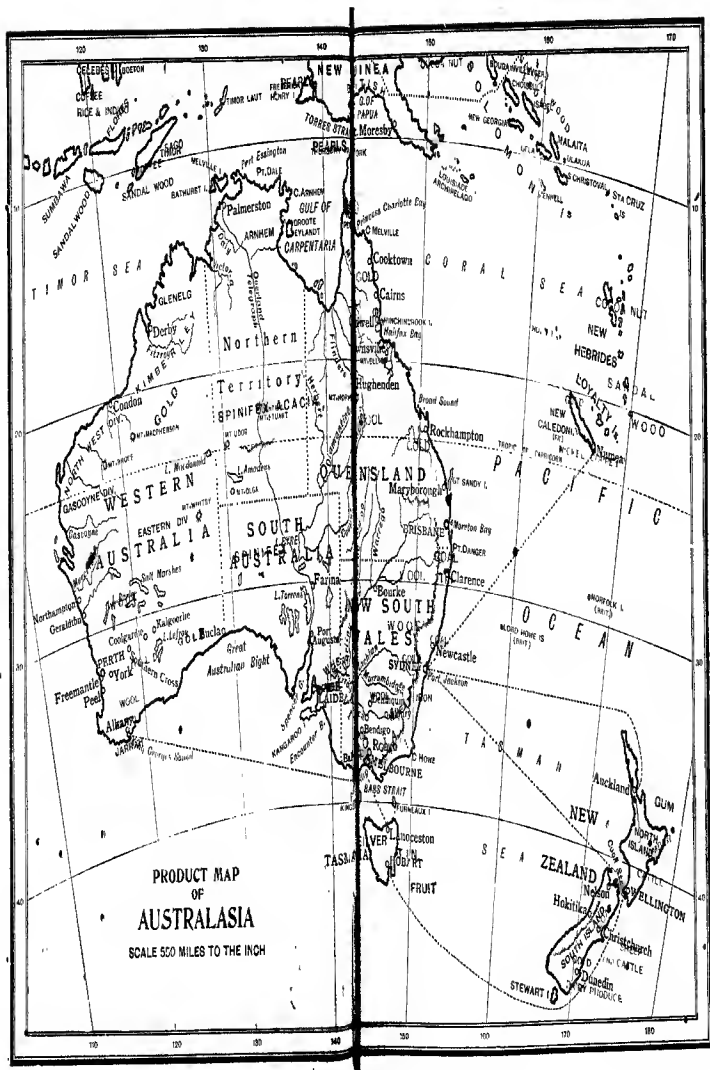
The exports to the United Kingdom, valued at over ten millions sterling annually, include *gold*, *wool*, preserved *meat*, and *metals*.

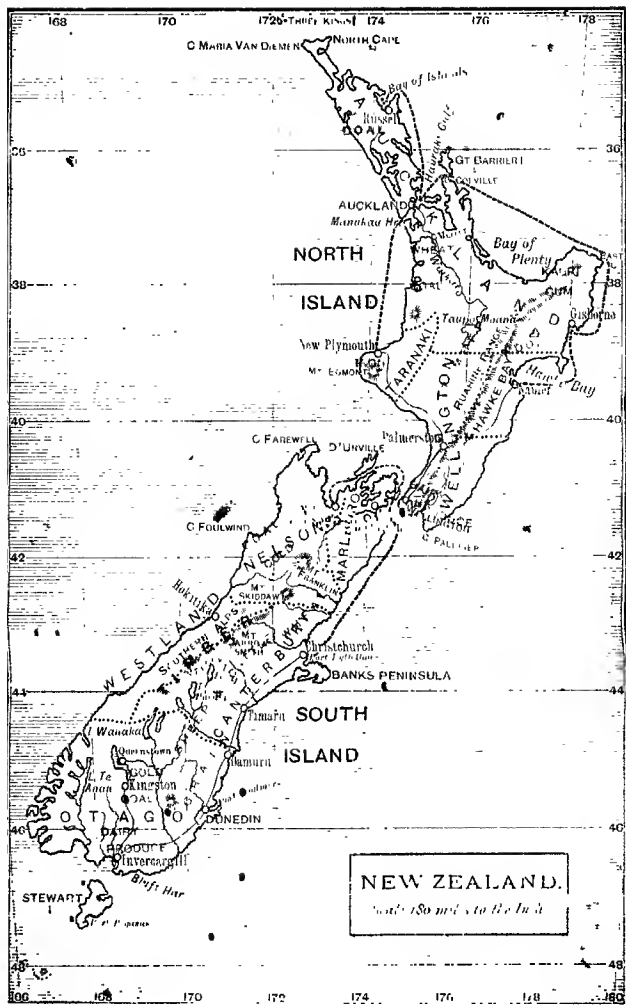
One-fourth of the population of the colony live in and around Brisbane, the capital, a city of nearly the same population as Plymouth. It is situated upon the Brisbane River, twenty-five miles from the sea, having railway and steamship communication with the colonies to the south.

### SOUTH AUSTRALIA.

South Australia joins the western boundaries of Victoria and New South Wales, comprising much of the arid region of the continent, the only inhabited portion being along the







coast. Including North Australia,<sup>1</sup> which is attached to it politically, the state of South Australia is twice as large as France and Germany combined, or fifteen times greater than England and Wales. The *population* is even less than that of Queensland. This is, essentially, an agricultural and pastoral colony, *wheat* being the chief crop, although only six or eight bushels per acre are grown. Other grains are cultivated, while *flax* and *hops* are receiving special attention; and *fruit* and vine culture are becoming very thriving industries; but most of the crops depend upon irrigation. The only metal mined to any extent is *copper*; and, as in the other colonies, *wool-growing* is the most profitable business.

The imports from and the exports to the United Kingdom, chiefly consist of *clothing* and *metal goods* on the one hand, and of *wool*, *wheat*, *flour*, *copper* and *wine* on the other.

Adelaide, the capital, about as large as Nottingham, is a busy seaport situated on the Gulf of St. Vincent. From this place a telegraph line extends across the continent for two thousand miles through the wilderness to *Port Darwin*, on the north coast, where it connects with the cable to Singapore and London; and a railway is being constructed between these two points.

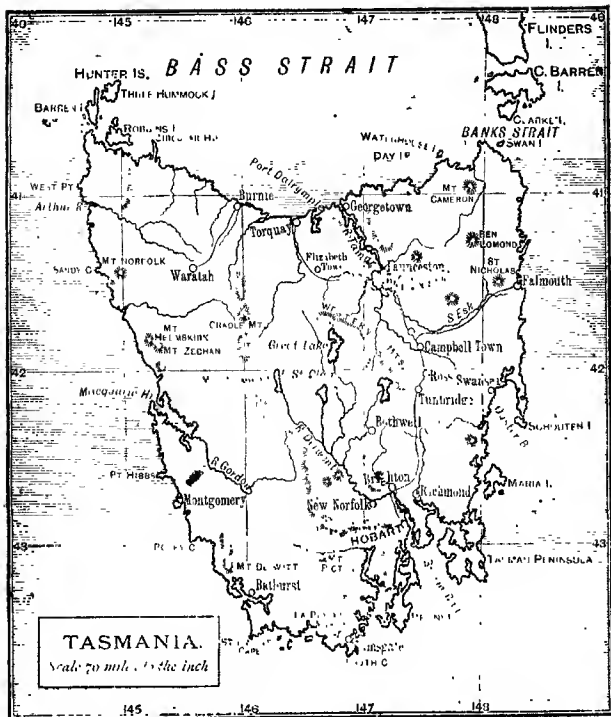
#### WESTERN AUSTRALIA.

Western Australia comprises all the continent to the west of the meridian of 129° east of Greenwich. The *area* is about a million square miles, but the *population* is not very much more than a quarter of a million, most of whom are settled in the south-western corner of the state. The productions, in order of value, are gold, timber, wool and skins, pearl-shells and pearls. Much of the interior is a sandy region.

The *forest area* of Western Australia is large, and the timber is very valuable. *Sandal-wood* and *jarrah* are exported, the latter being a very durable red wood adapted for harbours, railways, bridges, and street paving. The *minerals* that have been found include gold, iron, lead, copper and tin. *Silk culture* has recently been undertaken.

Gold is found in the *Coolgardie*, *Kalgoorlie*, *Kimberley*, *Pilbarra*, *Ashburton*, and *Murchison* Districts. Western

<sup>1</sup> The Northern Territory was transferred to the control of the Federal Government in 1911. Its capital is *Darwin*.



Australia is now the chief gold-producing state in the Commonwealth, the annual production in ounces being nearly one and a quarter millions. Besides *gold*, the exports to the United Kingdom chiefly consist of *wool* and *timber*; and the imports therefrom of *metal goods* and *textiles*.

Perth, the capital, is twelve miles from Fremantle, the chief port. Albany, another port, is on King George's Sound, in the extreme south. There is telegraphic communication with Adelaide. Kalgoorlie is the chief mining town.

## TASMANIA.

Tasmania, which occupies an *area* of over twenty-six thousand square miles, has more hill and dale than Australia, is better watered, and is altogether a milder and finer country. It is an island province off the south-east coast of Australia, and was formerly called *Van Diemen's Land*. Tasmania is nearly as large as Scotland, and has a *population* of two hundred and one thousand.

To a considerable extent the *surface* of Tasmania is mountainous and forest-covered, but the island is agriculturally rich, yielding large quantities of *hops* and *fruit*. The *climate* is equable and healthful; *grazing* is a leading industry; and Tasmanian *wool* is of the finest quality. The *forests* afford a variety of fine woods; there are some rich and extensive *coal-mines*, *tin-deposits*, and *stone quarries*; *gold* is also mined in many places.

Apart from its trade with the neighbouring colonies, nearly all the commerce of Tasmania is with the Mother Country. The value of the exports to the United Kingdom is over half a million, and of the imports more than three-quarters of a million sterling.

Launceston, an important northern port, is connected by rail with Hobart, the capital and commercial centre. The latter city is the chief *seaport*, and has a fine harbour on the south coast. Both of these places have steamship communication with Melbourne and Sydney, and they carry on considerable local industries, especially in the manufacture of *woollen fabrics*.

## THE DOMINION OF NEW ZEALAND.

**Size and Position.**—The group of islands known as the Dominion of New Zealand is nearly in the centre of the water hemisphere, as London is nearly in the centre of the hemisphere of the greatest amount of land. These islands are not less important in their physical geography than for their political and social importance. They possess a mountain axis, and exhibit volcanic phenomena. They are altogether about eleven hundred miles long, with an average width of two hundred miles, and an *area* a little less than that of the United Kingdom.



**Configuration.**—The mountains of New Zealand are of great elevation, the range running nearly parallel to that of eastern Australia. These *Southern Alps*, for that is the name by which they are known, include a large number of pyramidal peaks, rising more than ten thousand feet above the sea. The summit of *Mount Cook*, the highest of them all, is nearly twelve thousand five hundred feet above sea-level, or nearly three times as lofty as Ben Nevis. This great backbone runs through the islands from north-east to south-west, about thirty miles from the western coast. Very *lofty passes*, some of them eight thousand feet high, intervene between the peaks. *Gigantic glaciers* occupy the higher valleys, reaching down more than twelve miles into the lower country, and many of the mountains are volcanic. Some of the glaciers descend to within four thousand feet above the sea; and the *Tasman glacier* is twelve miles in length and nearly two miles wide. *Mount Egmont* rises to a lofty elevation, and is one of the noblest volcanoes of the Pacific.

New Zealand has a still more temperate climate than Tasmania, at least in all the low grounds and along the sea-board; although on the higher elevations it is often cold and stormy. It is also more irregular in coast-line, and has a copious supply of water. The climate, in short, is admirably adapted for raising every fruit, flower, and edible that flourishes in the British Isles.

The forests of New Zealand are extensive, and contain many valuable kinds of timber, especially the *kauri pine*, much valued for ship-building. The gum of this tree is used for making varnish. Sometimes very large pieces, of a hundredweight or more, of transparent and almost colourless gum, are found near the decayed roots of a tree. This fetches a high price, as it is used for making ornaments. It is easily worked with a knife into any shape, when it is polished with a soft rag and petroleum. Large masses of gum are sometimes found exuding from the living tree, but these are less valuable than the pieces of *fossil gum*. Three or four thousand men are engaged in digging the latter, which is found on North Island only. A fossil gum of dark colour is also found in considerable quantity in the coal mines, thus proving the antiquity of the *kauri* forests.

• *Phormium*. known in commercial circles as New Zealand

"flax" or "hemp," is cultivated in increasing quantities. The annual crop, the export of which is worth about three-quarters of a million sterling, is used with Manila hemp in rope-making, and also in the manufacture of paper.

Both North and South Island contain fine **pasture lands**. There are nearly thirty million sheep to be found in New Zealand, and the great **exports**, most of which go to London, are *wool* and *frozen mutton*.

The **imports from the United Kingdom**, about seven millions sterling annually, consist chiefly of *textile fabrics* and clothing, valued at two and a half millions sterling; *metal goods* and machinery, worth half a million sterling; *leather, spirits*, etc. The **exports to the United Kingdom**, amounting to upwards of twenty-eight millions annually, include *wool*, valued at eleven millions; *frozen meat*, four millions; *butter* and *cheese*, three and a half millions; *tallow, hides, kauri gum* and *flax* (phormium).

**Towns on North Island.**—**Auckland**, the chief commercial town, has a fine harbour. Population, 133,000. Steamers connect this port with Melbourne, Sydney, San Francisco and Vancouver, and with London direct.

**Wellington**, the capital, contains *woollen mills* and extensive meat-preserving establishments. Population, 95,000.

**Towns in South Island.**—**Dunedin**, population, 69,158, a very busy commercial town, has manufactures of *woollen goods* and *machinery*. Its average exports amount to nearly two million sterling and its nearest seaport is Port Chalmers.

**Christchurch**, population, 87,756, is the chief centre of trade for the surrounding agricultural and pastoral districts of North Canterbury. Its out-port is Lyttelton, whose exports amount to nearly three millions sterling.

**Invercargill, Napier, Palmerston North, Wanganui, and Greymouth** are also of note.

## CHAPTER IV.

### THE BRITISH EMPIRE IN ASIA.

**Subject Countries.**—The subject countries under the rule of the United Kingdom are inhabited by the races native to them, but they are governed by a small British population of resident merchants, officials, and troops. Some such possessions are *dependencies*, as *British India*; others are *protectorates*, as *Cyprus*. The profits which result from the control of their industries and trade far exceed the cost of keeping possession of such countries.

**The British Empire in Asia.**—The British Empire in Asia consists of the empire of *India*; the crown colonies of *Aden*, *Sokotra*, *Ceylon*, the *Straits Settlements* with *Labuan*, *Hong Kong* with *Kowloon*, etc.; and the protectorates of *Sarawak*, *North Borneo*, *Brunei*, the *Federated Malay States*, *Cyprus*, and *Wei-hai-wei*.

POSSESSION.	AREA, SQ. M.	POPULATION.
Indian Empire .. ..	1,803,000	244,000,000
Ceylon .. ..	25,500	4,424,000
Cyprus .. ..	3,600	300,000
Aden and Sokotra .. ..	10,400	60,000
Straits Settlements .. ..	1,600	821,000
Federated Malay States .. ..	27,500	1,118,000
Hong Kong and New Territories .. ..	390	535,000
Wei-hai-wei .. ..	285	130,000
British North Borneo .. ..	31,000	208,000
Brunei .. ..	4,000	30,000
Sarawak .. ..	42,000	600,000
Bahrein Is. .. ..	250	105,000

### THE BRITISH EMPIRE IN INDIA.

**Extent and Boundaries.**—The British Empire in India extends over a territory larger than the continent of Europe except Russia. The *political boundary* of India marches with Persia from the Arabian Sea to the Hari Rud River; then with the Russian Empire as far as the River Oxus; then along

the Oxus up to the Victoria Lake. From this point the frontier touches the Chinese Empire mainly along the crests of the Himalayas, until the limits of French control on the Upper Mekong are reached. Leaving the Mekong, the frontier marches with Siam until it reaches the sea half-way down the Malay peninsula.

Beyond the sea, the Indian Empire includes :—

1. The *Andaman and Nicobar Islands* in the Bay of Bengal ;
2. The *Laccadive Islands*, in the Arabian Sea ;
3. *Aden*, on the coast of Arabia, see page 137 ;
4. *Perim*, at the entrance of the Straits of Bab-el-mandeb ;
5. Protectorates over *Sokotra*, *Bahrein*, and over the various chieftains along the coast of Arabia, from Aden to the Persian Gulf.

Continental India, including Baluchistan, but excluding Afghanistan, has an area of over one million eight hundred thousand square miles, of which about three-quarters of a million square miles are under native administration. The population of this mighty empire is over three hundred millions, seventy millions belonging to the native states. The British residents number about one hundred thousand.

**Configuration.**—Excluding the province of Burma, which lies to the east of the Bay of Bengal and forms no part of the peninsula of Hindustan, we may broadly divide the country for geographical purposes into three sections :—

1. The *Himalayan region* ;
2. The *northern river plains* ; and
3. The *southern table-land of the Dakhan*.

**The Himalayan Region.**—All true mountain systems have one side steeper than the other. Thus, the great Himalayan chain falls by slow degrees and numerous terraces towards the frozen sea, but drops down suddenly towards the plains of India and the valley of the Ganges.

The Himalayan chain stretches, in an irregular line, from the defile above Kashmir, on the north-west, through which the River Indus penetrates to the plains of the Punjab, to the southern bend by which the Brahmaputra enters India ; the total length of the chain being about twelve hundred miles and the breadth about one hundred and fifty miles. It is traversed by a few lofty passes, of which the *Karakoram*,

more than eighteen thousand feet above the sea, and the loftiest road on earth, is the most important. The usual time taken to cross the chain here is sixty-six days, during twenty-five of which the road is never below the level of fifteen thousand feet. In summer, in some places along this pass, there are only patches of snow.

The most important passes are shown in the following table :—

**The Principal Himalayan Passes.**

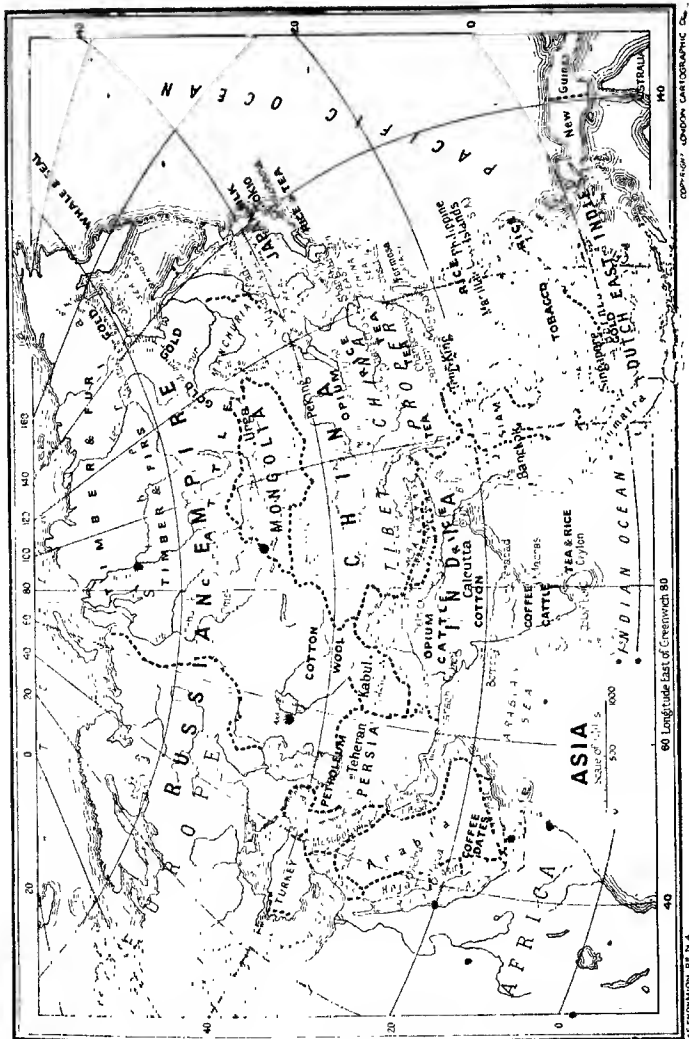
PASSES.	FROM	TO
The Kandriball Pass .. ..	Kashmir	Leh.
The Karakoram Pass .. ..	Leh	Tibet.
The Gang-tang Ghat .. ..	Srinugur	Chabrang.
The Niti-Ghat .. ..	"	"
The Mastang Pass .. ..	Nepal	Tibet.
The Lachen and Lachong ..	Darjuling	Lhasa.

A great part of the Himalayas is always covered with snow, and the higher valleys contain the largest glaciers on the earth. The snow-line varies from about fifteen thousand five hundred feet high, on the southern side of the range, to about eighteen thousand feet high on the northern side.

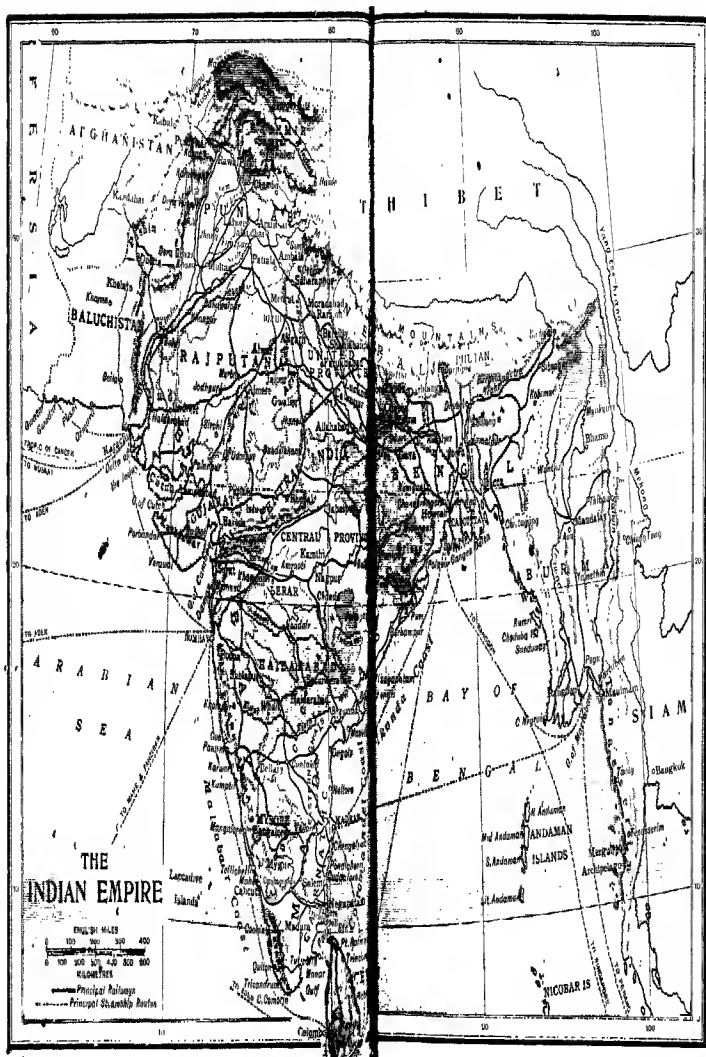
To the west of the Himalayas is the Hindu Kush, consisting of several ranges, the *Sulaman Hills* and the *Hala Mountains*. These form the boundary between Hindustan and western Asia. Here there are four passes, easy of access, which are in the hands of the paramount power.

PASSES	FROM	TO
Kyber Pass .. ..	Peshawar	Jelalabad.
Kuram, Shutagardan, and Khurd Kabul Passes	River Indus	Kabul.
Gomul Pass .. ..	Gomul	Kandahar.
Bolan Pass .. ..	Shikarpur	Quetta.

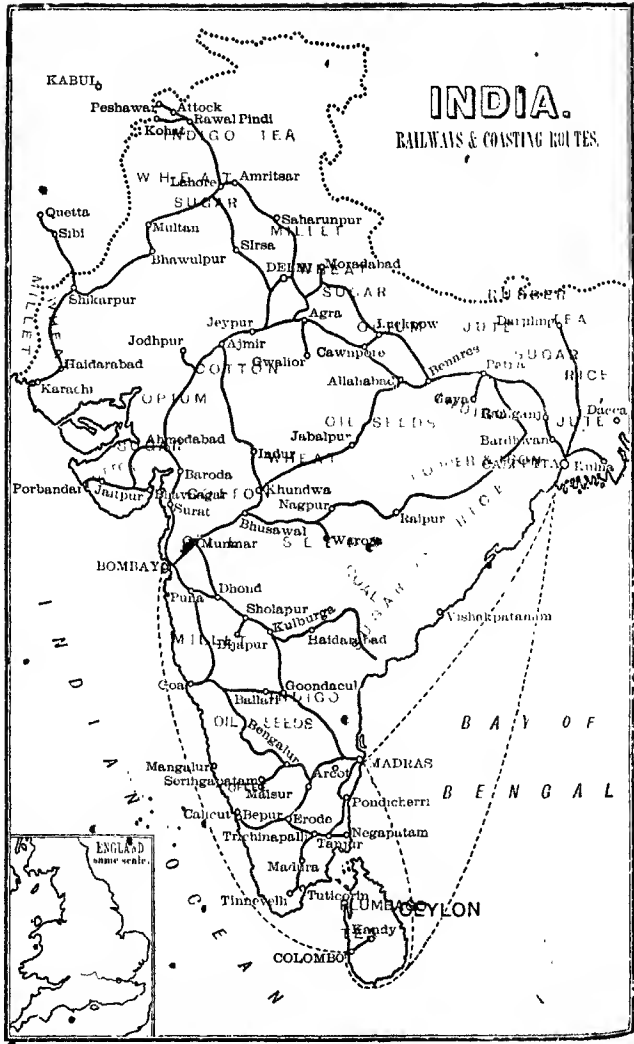
**The Northern River Plains.**—The northern river plains, lying at the foot of the Himalayas, and stretching from sea to sea, comprise the rich alluvial lowlands watered by the



(1482)—between pp. 164 & 165



## RAILWAYS & COASTING ROUTES.





Indus, the Ganges, the lower course of the Brahmaputra, and their tributaries. The richest, the most populous, and the most prosperous parts of India are to be found in the basins of these three great rivers. The Ganges is not only the great highway of Bengal, it is also the water-carrier and the fertilizer.

To the westward is the Indus River, which, for eighteen hundred miles, flows through a valley of great fertility; although, owing to bars and other obstructions, this river is not navigable. In the Punjab the Indus receives many tributaries, but its lower course is through the arid Thar region, where settlement is confined to the irrigated areas along the banks of the river.

At the east are the Ganges and Brahmaputra rivers, which unite, their mouths forming the great delta of the Ganges. The Ganges flows to the south-east through very fertile valleys. It is fifteen hundred miles long, and is navigable for two-thirds of the distance.

The Brahmaputra is an important highway of commerce, being several miles wide in the lower part of its course. Both the Ganges and the Brahmaputra bring down vast quantities of mud, with which they have built up their enormous delta.

The Southern Tablelands of the Malva and Dakhan.—The southern half of Hindustan is a triangular, upland tableland, comprising the plateaux of the Malva and the Dakhan, separated by the *Vindhya Mountains*. Much of the surface consists of sheets of lava, poured out under water, and to this is owing the tabular form of the country and the gorges produced by the action of water on the cracks in the lava sheets. The Dakhan is terminated towards the sea by the *Eastern and Western Ghats*, which meet in the Nilgiri Hills. These run close to the coast. The soil of the Dakhan is fertile, but the country is liable to drought. Water stored in tanks and reservoirs during the rainy season, is used throughout the rest of the year.

Coast-line.—The coast-line of Hindustan, which is almost unbroken except for the gulfs of *Cutch* and *Cambay*, is known by different names in different parts.

The *Orissa Coast* lies between the delta of the Ganges and the mouth of the Godavari.

The *Golconda Coast* lies between the mouths of the rivers Godavari and Krishna.

The *Karimnal Coast* lies between the mouth of the Krishna and Palk Strait.

The *Malabar Coast* is the name given to the south-western shores of Hindustan between Goa and Cape Comorin.

**Productions.**—The *climate* of Hindustan is tropical on the plains, and a great variety of crops are raised. The northern plain yields two harvests in a year; the chief food crops being *wheat*, *barley*, *maize*, *millet*, various *pulses*, or pod crops, and *rice*. As rice requires much moisture for its cultivation, it is raised chiefly in the great river valleys and along the western coast. Contrary to the generally received opinion, this grain is the principal diet of only a small proportion of the total population. The Hindus depend for most of their food supply upon millet and the other seed crops which do not require a heavy rainfall.

The *tea-plant* is reared in Assam, a north-eastern province of Hindustan; the *opium-poppy* is cultivated in many parts of the Ganges valley; and *jute* is grown throughout the vast delta of the same river. In the north-west *cotton*, *indigo*, *sugar*, and *oil-seeds* are raised extensively.

In the Dakhan, *cotton*, *dye-stuffs*, and *spices* are raised for export, while the various small grains are grown for food.

Much of the hillside country, comprising nearly one-twelfth of the whole area, is covered with *forest* and *jungle*. The cutting of timber is regulated by the Government; and *teak*, a wood highly valued for ship-building and other purposes, is most in demand.

The *mineral wealth* of India is nearly all confined to the Dakhan, in the northern third of which are rich *coal-mines*. There are eighty collieries, having a yearly output of seventeen million tons. The coal district of Raniganj and Burdwan, on the Ganges, supplies the greater portion of Bengal. The other minerals found are *iron*, *gold*, *copper*, and *salt*. Maisur yields most *gold*; the region round Delhi most *copper*; and the Punjab most *salt*.

**Commerce.**—Under British influence India has developed wonderfully, and become of great importance to the commercial

world, both as a producer and as a consumer. Since the year 1914 the imports have decreased slightly, and the exports doubled. The *commerce* is under British control. By a good railway system the producing centres of India have been brought into closer communication, and many districts distant from the coast can thus dispose of their products to advantage.

The sea-borne foreign commerce of India has an annual value of *two hundred and eighty-four millions sterling*, taking the value of the rupee at one shilling and fourpence.

The imports by land and sea, chiefly from the United Kingdom, amount to about one hundred and twenty-four millions sterling. Of these *cotton goods and yarn* form nearly one-half of the whole value. The other great items are *machinery and hardware* of all kinds, *sugar, woollen goods, provisions, and clothing*.

The exports, valued at about one hundred and sixty millions sterling, consist of *jute*, both raw and manufactured; raw *cotton*, yarns and goods; *grain*, chiefly *rice*; *hides and skins, seeds, tea, opium, lac, raw wool, and coffee*. The rice and opium go mainly to China and the East India Islands.

India raises thirty bushels of wheat per head of her population, much of which is required for food and seed, but the rest is exported, chiefly to the United Kingdom.

The overland trade with adjoining countries amounts to a little over fifteen millions sterling annually, the imports slightly exceeding the exports. This trade is chiefly carried on with Nepal, the Shan States, Afghanistan, Kandahar, Karreni, Kabul, Tibet, etc. The export is that of *cotton goods*, chiefly European; the chief import is *grain*.

**Railways.**—The chief railways of India are:—

1. The *North-Western line*, from *Calcutta*, through Patna, Benares, Allahabad, Cawnpore, Agra, Delhi, and Lahore, to *Peshawar*.

2. An important line from *Bombay* meets the north-western railway at Allahabad. Bombay is also connected with Madras by rail.

3. The *Punjab Railway* connects Karachi with Haidarabad and Lahore, and also sends out a branch to Sibi and Quetta, in British Baluchistan.

Provinces. — British India comprises the following provinces :—

PROVINCE.	CHIEF TOWNS. :
1. Madras	<i>Madras</i> (519), Trichinapalli, Madura, Calicut, Tanjur.
2. Bombay	<i>Bombay</i> (city and island, 979), Puna (159), Surat, Ahmedabad (217), Karachi.
3. Bengal	<i>Calcutta</i> (with Howrah and suburbs, 1,222), <i>Dacca</i> (109).
4. Bihar and Orrisa	Patna (136).
5. Assam	<i>Shillong</i> (14).
6. The United Provinces (Agra and Oudh)	<i>Allahabad</i> (172), Benares (204), <i>Lucknow</i> (260), Cawnpore (178), Agra (185).
7. The Punjab	<i>Lahore</i> (229), Simla, Amritsar, Patiala, Multan, Rawal-Pindi.
8. Central Provinces	<i>Nagpur</i> (101), Jabalpur.
9. Burma	<i>Rangun</i> (293), Mandalay (138).
10. Delhi	<i>Delhi</i> (233).
11. N.W. Frontier Province	Peshawar (98).

In addition to the above, Ajmir-Merwara, Coorg, British Baluchistan, Bhutan, Nepal, Sikkim, and the Andaman and Nicobar Islands, are under entire British control. Aden forms a part of Bombay.

The Native States are very numerous, and vary much in size, from Rajputana, which is larger than the United Kingdom, to a single village.

**Madras.**—Madras, a province in the south-eastern part of the peninsula, is larger than the United Kingdom, and has over two hundred and ninety inhabitants to the square mile. This province has no good natural harbour, that at the city of Madras having been constructed at vast expense. The province has little mineral wealth, but it has very large areas under millet, rice, and other grains, cotton and oil seeds.

*Madras*, the capital, takes rank as the third seaport of the Indian empire. It has a greater population than Sheffield.

**Bombay.**—The province of Bombay, including Aden and Perim, is slightly larger than the United Kingdom, and has a *population* of over nineteen millions. It has many fine *natural harbours*, the most important of which are Bombay

and Karachi. *Cotton* is largely produced for export and for manufacture.

*Bombay*, the capital, has the best harbour in India, and excellent railway communications with the interior. It is the second largest city in India, having a population which is now almost a million, and the third in point of size in the British Empire. Cotton manufacturing is the chief local industry.

*Puna* is another large city of Bombay.

In *Sindh*, which forms a part of the Province of Bombay, are Karachi, now the great port for north-west India, and Haidarabad.

**Bengal.**—In 1912, the districts detached from Bengal and joined to Assam were restored to the Presidency; the new province of Bihar and Orissa was also formed. The population is very dense, the average being five hundred and seventy people to the square mile. For the most part, this province is a great rice-producing alluvial plain. The chief *products*, besides rice, are opium, indigo, and jute.

*Calcutta*, the capital of the province and of the Indian Empire until 1911, stands on the Hughli, a branch of the Ganges, about eighty-five miles from its mouth. It contains over a million people, and occupies the second position in point of size in the British Empire. There are extensive *manufactures* of jute and of the coarser cotton fabrics. The *exports* include these products, besides tea and rice, to a great annual value.

*Patna*, on the Ganges, is the capital of Bihar and Orissa. It is the centre of the great rice-growing area.

**The United Provinces (Agra and Oudh).**—The United Provinces of Agra and Oudh, with a population two-thirds of the German Empire, on less than half its area, comprise the upper part of the great plain of the Ganges. The productions of this province resemble those of Bengal; *wheat, maize, indigo, sugar, rice*, and *oil seeds*, are grown for export. *Tea* is also cultivated on the lower slopes towards the Himalayas. The chief towns of the United Provinces are Allahabad and Lucknow.

*Lucknow* is quite a modern city, wealthy and prosperous, and very picturesque. It is noted for its manufactures of gold and silver, for its jewellery, gold-enamelling, gold and

silver wire-drawing, gold and silver lace, brocades and embroidery. It contains about a third as many people as Sheffield.

*Benares*, the tenth city of British India in size, population, and importance, is a great distributing centre of trade and commerce, and is noted for the manufacture of ornamental brass work, as well as for its silks, shawls, embroidery and brocades.

*Cawnpore* contains rather fewer people than Bolton in Lancashire. It is noted for its manufactures of leather and cotton goods.

*Allahabad*, standing at the junction of the Jumna with the Ganges, a city having a population rather less than that of Croydon, is a great corn and cotton mart.

*Agra*, finely situated on the River Jumna, a well-built town, nearly equal in population to Cardiff, is one of the most interesting places in India, and an important trading centre.

**The Punjab.**—The Punjab, or "five rivers," with an area of about twenty thousand miles less than that of the United Kingdom, and a population of about nineteen millions, is an agricultural province, depending largely upon artificial irrigation for its harvests. There are rich deposits of *rock-salt*, which, with *wheat* and *cotton*, forms the chief export.

*Delhi*, on the Jumna, a city with a population equal to that of Leicester, is the point of convergence of the railway lines between Calcutta, Peshawar, and Bombay.

*Lahore*, the capital of the Punjab, a city with a population rather less than that of Leicester, occupies an important position just where the railway from Karachi joins the main-line between Peshawar and Calcutta.

**The Central Provinces.**—The Central Provinces of India, with an area nearly equal to that of Great Britain, and a population equal to that of Holland and Belgium combined, possess large *coal-fields* and excellent *iron-ore*, and export *rice*, *wheat*, and *cotton*.

*Nagpur*, the capital, a city with a population nearly equal to that of Halifax, stands on the railway which runs across the Central Provinces.

**Burma.**—The thinly-peopled province of Burma has an area equal to that of Sweden, with a population only a quarter of that of the United Kingdom. The delta country

of Lower Burma is flat, but above Prome the country is hilly. *Rice*, the principal product of the delta region, is largely exported; and so is *teak*, which comes from the forests of both Upper and Lower Burma, from the Shan States and Siam. Upper Burma is rich in *minerals*, including gold, silver, rubies, jade, iron, lead, tin, coal, and petroleum.

*Mandalay*, a rather more populous city than Birkenhead, once the capital of the Burmese empire, is now united by railway with Rangun.

*Rangun*, having a population rather more than that of Hull, is, after Calcutta, the busiest port in the Bay of Bengal, exporting *rice* and *teak*, and receiving British manufactured goods intended for the interior and for the province of Yunnan, in China.

**Assam.**—This province, united in 1905 with Eastern Bengal, became a separate province again in 1912. It contains nearly seven million people, and includes the most important tea-growing districts of India; there are about eight hundred gardens, which produce every year upwards of two hundred and fifty million pounds of manufactured tea.

#### CEYLON.

**General Description.**—Ceylon is a large island rather more than three-fourths the size of Ireland, and having a population a little greater than that of the same country. It is situated to the south-east of Hindustan, from which it is divided by a narrow, shallow channel, Palk Strait. The northern portion of the island is one vast forest, broken here and there with specks of cultivated ground. The southern half is a mass of granite mountains, with a margin of rich lower land; and here are the chief centres of modern industry. Almost in the centre of the island is *Kandy*, a former capital, united by railway with the chief port and present capital, *Colombo*.

**Productions.**—About one-fifth of the island is under cultivation, the leading products, in order of acreage, being *cocoa-nuts*, *rice* and other grains, *tea*, *rubber*, *cocoa*, *cinnamon*, and *tobacco*. Ceylon is famous for *precious stones*, especially cat's-eyes and rubies. The *pearl-fishery* in the Gulf of Manaar, off the north-western coast, is, in some years, a valuable source of income. *Graphite* is mined in large quantities.

**Commerce.**—The foreign trade is chiefly with the Indian ports and the United Kingdom; *rice*, *coal* and *coke*, and *cotton goods* being the chief imports. Tea forms more than one-half of the exports to the United Kingdom, the other principal articles being cocoa-nut products, plumbago, rubber, cocoa, araca nuts and cinnamon.

**Towns.**—*Trincomali*, on the east coast, has one of the finest harbours in the world, and is the depôt of the British navy in the East Indies; but *Colombo* is the capital and chief commercial town.

#### CYPRUS.

**Description.**—Cyprus is an island in the eastern Mediterranean, having an *area* of nearly three thousand six hundred square miles, and a *population* of two hundred and seventy-five thousand people, nearly four-fifths of whom are Greek. The capital is *Nicosia*, or *Lefkosia*, near the centre; population, 16,052. *Larnaca* possesses the only useful harbour.

**Productions.**—The principal productions are *grain*, *raisins*, *linseed*, *wine*, *silk*, *olives*, *locust-beans*, *cotton*, *wool*, *hides*, and *sponges*.

#### THE STRAITS SETTLEMENTS.

**General Description.**—The Straits Settlements is the name given to the British possessions and protectorates in the Malay Peninsula, including:—

1. *Singapore*, already described on page 137, with *Christmas Island* and *Labuan*.

2. *Penang*, or Prince of Wales Island, with *Province Wellesley*, and the *Dindings*.

3. *Malacca*.

4. The *Keeling* or *Cocos Islands*.

Closely connected with the Straits Settlements are the *Federated Malay States*, a British Protectorate, including *Perak*, *Selangor*, *Negri Sembilan*, and *Pahang*.

**Productions.**—The chief objects of culture are *rice*, *sugar*, *coffee*, *spices*, *tapioca*, *cocoa-nuts*, and *pepper*. The most flourishing industry in these settlements, however, is *tin-mining*.

#### BRITISH POSSESSIONS IN BORNEO.

**General Description.**—The British Protectorate in Borneo consists of *British North Borneo*, under the jurisdiction of



the British North Borneo Company, *Brunei*, and *Sarawak*. Labuan was transferred to the Straits Settlements in 1907.

British North Borneo exports *rubber* and other tropical products, but the large export is *tobacco*. *Coal*, *gold* and *mineral oil* have been found but have not yet been worked.

Sarawak has large mineral wealth which has not yet been developed. The chief exports are *pepper* and *sago-flour*.

The trade of Borneo is chiefly with Britain and the Empire, and is carried on through Singapore and Hong Kong.

The imports are chiefly textile fabrics and metal goods.

Sandakan is the chief town of British North Borneo.

## CHAPTER V.

### THE BRITISH EMPIRE IN AFRICA, ETC.

**Coast-line.**—The continent of Africa is remarkable for the *simplicity of its outline* and the absence of deep indentations in its coast. Surrounded by the sea, except at the very narrow, canal-pierced isthmus of Suez, it is almost without a peninsula or inlet of any kind; and it has only one mile of coast for every seven hundred miles of surface. This proportion well represents the peculiar and, until lately, the hopeless condition of Africa with reference to inter-communication. Africa can only be opened up by means of railways; for even the nature of its rivers is unfavourable to access into the country. Some of the largest of them flow within its equatorial limits, and either reach the ocean through swampy jungles, which it is death for white men to enter, or descend by cataracts and waterfalls which are impassable to navigation.

**Configuration.**—The surface of Africa may be divided into the following regions:—

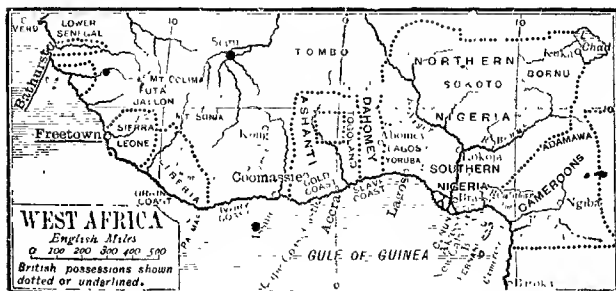
- 1. The *mountainous district* lying between the Mediterranean and the Sahara.
2. The desert region of the *Sahara*.
3. The great grass-lands of the *Soudan*.
4. The *Abyssinian Highlands*.
5. The *Congo Basin* and the coast region as far as Sierra Leone.
6. The *great grass-lands* to the east and south of the Congo Basin. Much of the east coast of this region is low and unhealthy, like Sierra Leone.
7. The *arid region* of the Kalahari.
8. The *temperate grass-lands* of Transvaal and the Orange Free State to the west of the Drakensberg.
9. The *eastern slopes* of the Drakensberg to the sea—Natal.
10. The *Cape Region*.

**The Gambia.**—*Gambia*, at the mouth of the river Gambia, consists of (1) the Colony of Gambia with an area of four

square miles and a population of nine thousand, and (2) the Protectorate with an area of 4,000 square miles and a population of 200,000, including a few white men. The trade is chiefly in *ground-nuts*, which yield oil, and other native produce, and the *capital* is Bathurst. Most of the trade is with the adjoining French colony.

**Sierra Leone.**—The crown colony of Sierra Leone is an unsurveyed region on the west coast of Africa with a population of nearly 75,600, including about 700 Europeans. The exports are *palm-oil, ground-nuts, india-rubber, gums, wax,* and other native produce. The area is 4,000 square miles.

The Protectorate extends inland for 180 miles. It has an area of 27,000 square miles and a population of 1,327,569. *Rice, palm-kernels and kola nuts* are exported; *cotton goods and tobacco* are imported.



Freetown, the capital, a *naval and military station*, is the head-quarters of the British black troops, who are kept almost constantly busy by the little wars in our West African possessions.

**The Gold Coast.**—In the British Colony on the Gold Coast about 2,000 Europeans reside, but trade between England and this part of Africa has been carried on since the sixteenth century. The chief exports are *palm-oil, india-rubber, cocoa, and gold*. There is much gold in the country and nearly two million pounds' worth is exported annually. The climate

is so unhealthy as to be a bar to its development. *Capital, Accra*, with a population of 20,000.

**Nigeria.**—The recently-formed crown colony of Nigeria consists of what was until lately known as the colony and Protectorate of *Lagos*; the *Niger Coast Protectorate*, formerly called the "Oil Rivers Protectorate"; and the territories of the *Royal Niger Company*. It includes the basin of the lower Niger and its tributary, the Benue, and extends north-eastward to Lake Chad. Its area is ten times that of England, excluding Wales, and it has a population of about sixteen millions. Within its limits are the fertile regions of *Yoruba*, *Gandu*, *Sokoto*, and *Bornu*. It commands the best routes into the farther interior; for the markets in Sokoto and Gandu do an immense amount of business with the Western Soudan. The Lagos railway also has produced a marked increase in the commerce between the Niger valley and the coast. A channel, now being dredged, will give ocean steamers access to the port and produce a further increase.

Nigeria was divided, in 1906, into (1) The Northern Nigeria Protectorate, and (2) the Colony and Protectorate of Southern Nigeria. In 1914 these were amalgamated to form the "Colony and Protectorate of Nigeria." The chief productions are *palm-oil*, *gum-copal*, *ivory*, *nuts*, *rubber*, *hides*, and *cotton*, and these articles are exported. The principal imports are *cotton goods*, *earthenware*, *hardware*, *cutlery*, *gunpowder*, *salt*, *silks*, *spirits*, *tobacco*, and *woollen goods*.

The chief towns are *Lagos* (41), and *Old Calabar* (15).

**The Southern, or Cape Region.**—The Southern, or Cape Region, rises by successive stages towards the interior, these stages forming irregular terraces, which are covered with grass after the rains, but become hard and bare, or only partly dotted with thorny scrub, during seasons of drought. Upon the whole, this region is hilly and irregular in surface, has a healthy but arid climate, is by no means well watered by rivers, and is occasionally subject to destructive droughts. In the Natal district the climate is more genial. Here, also, the United Kingdom has several colonies.

The Union of South Africa, formed in 1909, consists of four provinces:—(1) the Cape of Good Hope (formerly Cape Colony); (2) Natal; (3) the Transvaal; (4) the Orange Free State (formerly Orange River Colony).

## CAPE OF GOOD HOPE.

Cape of Good Hope includes the part of Africa south of the Orange River; and, in addition, the diamond fields of *Griqualand West*, *British Bechuanaland*, and *Walfisch Bay* to the north of the Orange River are included within its limits.

The area is more than four times that of England and Wales, but the population is only about two millions and a half, of whom only one-fourth are of European origin. The majority of the white people are *Dutch* in the West, *English* in the East.

**Surface.**—The surface of the Cape of Good Hope consists of a series of *terraces* separated from each other by mountain ranges which run parallel with the coast. Between the mountains and the sea in the south-western part of the colony, the chief *grain* and *wine* growing districts are to be found. Between the loftiest ranges of mountains lies the **Great Karroo**, an elevated table-land, seventy miles wide, where *sheep* and *ostrich farming* is carried on. Still further northward, the table-land is higher still, and it is here that the chief *mineral district* of the colony is situated.

**Rivers.**—The rivers of the Cape of Good Hope are numerous, but useless for navigation. They flow in deep ravines, and are impetuous torrents in the rainy season, and mere brooks during dry weather. The largest is the *Orange*, which partly forms the northern boundary of the colony.

**Climate and Productions.**—The climate of the Cape of Good Hope is *healthy* and dry, and this dryness renders it a suitable resort for people suffering from lung diseases. The vegetation is marked by the number of brightly coloured flowers, especially *heaths*, and dense thorny thickets of *aloes*, called "bush." The native *animals* are retreating to the north, but *elephants* and *cape buffaloes* are still to be found in the forests of the south coast, and *springboks* are numerous in some parts.

**Industries and Commerce.**—*Diamond-mining* and *sheep-farming* are the industries of greatest importance; and, accordingly, *diamonds* and *wool* are the most valuable of the exports. *Ostrich feathers*, *angora hair*, *hides*, and *skins* are also produced and exported. The imports are *cotton* and *woollen goods*, about half the trade being with the Mother Country.

The exports to the United Kingdom reach an annual value of fourteen millions, the chief of which are the produce of the mines, and of the sheep, cattle, and ostrich farms.

The imports from the United Kingdom were of the value of about ten and a half millions in 1906, and a little less in 1917; clothing and textile fabrics are the chief.

**Towns.**—There are several flourishing towns on or near the southern coast.

*Cape Town*, the capital of the colony, contains (including suburbs) 213,000 people, and lies at the head of Table Bay, twenty miles to the north of the Cape of Good Hope. The harbour has a fine breakwater and docks, and Cape Town is a much frequented port of call, nearly half of its import trade being in goods for the inland states of South Africa, and its most valuable export gold from the Transvaal. Other articles of export are *diamonds*, *wool*, *ostrich feathers*, *angora hair*, *hides*, and *copper ore*. The labouring classes consist of the native blacks and Malays.

*Port Elizabeth*, on Algoa Bay, two hundred miles east of Cape Town, is a busy seaport.

*Kimberley* is in the centre of the diamond mines.

**Railways.**—There are three main lines of Railway, viz. :—

1. The **Western**, running from *Cape Town*, through *Kimberley* and *Mafeking* into Rhodesia, and thence (a) to *Beira* via *Salisbury*, and (b) across the *Zambesi* at *Victoria Falls* to the boundary of *North-Western Rhodesia*, whence it is being carried on to *Lake Tanganyika*.

2. The **Midland**, from *Port Elizabeth* to *Nagawepoort*, where it branches (a) to *Bloemfontein* and *Pretoria*, and (b) to *De Aar Junction*, where it joins the **Western**.

3. The **Eastern**, from *East London* through *Burghersdorp*, to *Springsfontein*, the junction with the **Midland**.

## NATAL.

**Configuration.**—The colony of Natal, including Zululand and Amantongaland, has an area of about 35,000 square miles, and a population of nearly one and a quarter millions, less than one-tenth of whom are Europeans. It is bounded on the north-west by the *Drakensberg Mountains*, a continuation of the great range which commences at the Cape of Good Hope.

The country rises from the shores of the Indian Ocean in terraces. Natal has many rivers, but none of them are navigable.

**Productions.**—The chief productions of Natal are as follows :—

**Coast District.**—Sugar, coffee, indigo, arrowroot, ginger, tobacco, rice, pepper, cotton, pine-apples, tea.

**Midland District.**—Corn crops.

**High Table-land.**—Sheep farming, horse rearing, cattle ranching.

Forests of valuable timber are found in the mountain ranges and along the coast. The coal-fields of *Newcastle* are connected with Durban by rail.

**Commerce.**—The imports from the United Kingdom consist chiefly of clothing and textile fabrics, metals and metal goods, in value £4,750,000.

The exports to the United Kingdom are chiefly *wool* and *skins* and *dye-stuffs*; value £5,000,000.

Besides these much *gold* from the Transvaal is exported.

The only port of the colony is *Durban*, or Port Natal, and the main line of railway runs from this port through *Pietermaritzburg*, the capital, through *Charlestown*, on the border of the Transvaal, to *Johannesburg* and *Pretoria*.

**Other South African Colonies and Protectorates.**—*Basutoland*, between the Cape of Good Hope, the Orange Free State and Natal, is a splendid grain-producing and ranching country.

*Bechuanaland*. The southern part of this country has been added to the Cape, while the northern portion is a British Protectorate. The exports are *maize*, or mealies, *wool*, *hides*, *cattle*, and *timber* for *Kimberley*.

*Zululand*, formerly a separate British crown colony, was annexed to Natal in 1897.

*Swaziland*, to the south-east of the Transvaal, is an agricultural and grazing state.

#### THE TRANSVAAL AND THE ORANGE FREE STATE.

In 1899 the Boers, inhabiting the "Transvaal Republic" and the "Orange Free State" in South Africa, declared war with Great Britain, and being defeated, those two States were annexed to the British Empire. Responsible government was granted to each in 1906, the names being the *Transvaal*

and the *Orange River Colony*. In 1909 they became parts of the Union of South Africa under the names *Transvaal* and *Orange Free State*.

#### THE TRANSVAAL.

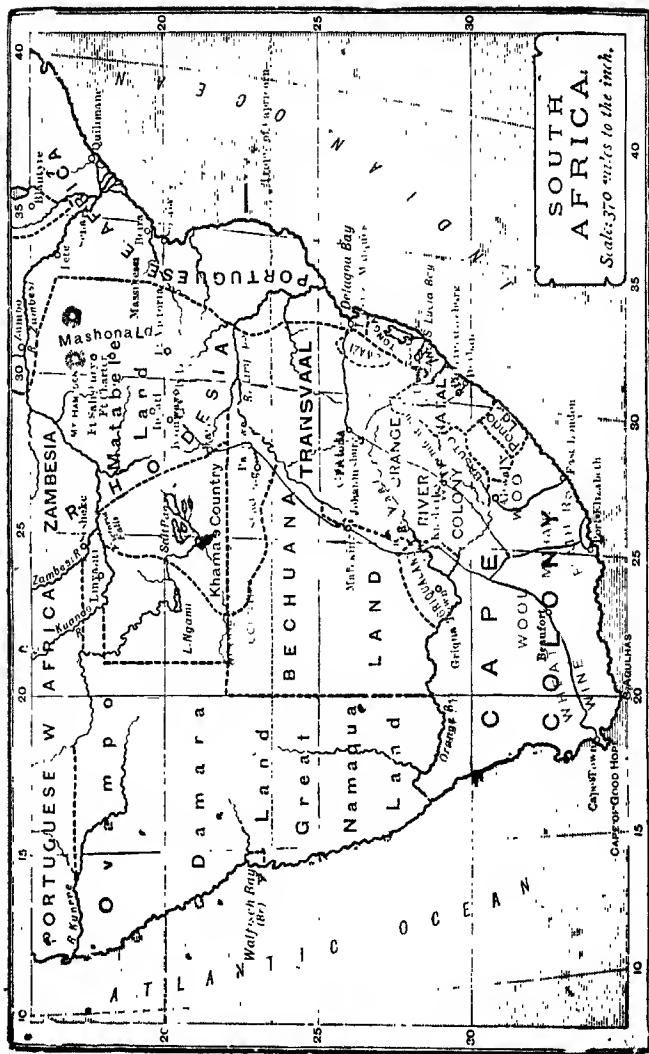
**Boundaries and Extent.**—The Transvaal includes the territory between the Vaal River in the South, and the Limpopo in the North, and between the Portuguese Possessions and Natal on the East, and Bechuanaland on the West. It includes Swaziland, and the total area is about 111,000 square miles, while the population is about 1,700,000, of whom whites number about 500,000.

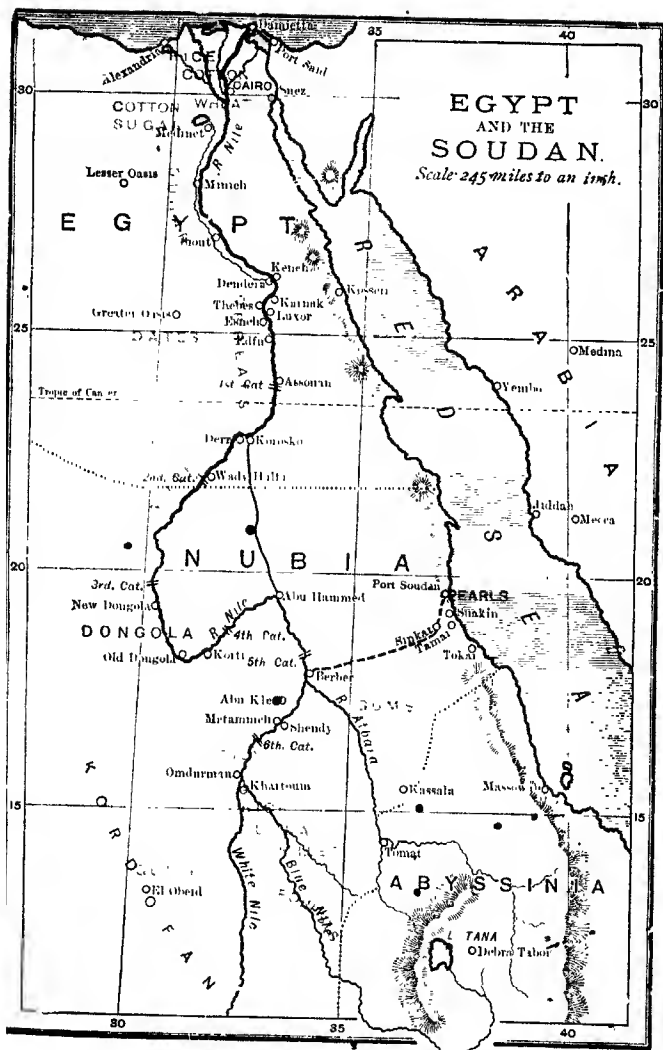
**Surface.**—The surface is an elevated plateau, 3,000 feet above sea-level, dotted with thinly wooded hills, called "kopjes," covered with thorny "bush" and interspersed with "spruits" or depressions worn out by the action of streams. The northern extension of the *Drakensberg Mountains*, with the offshoot known as the *Magliesberg*, runs north and south, the highest summit being *Mount Murch*, 8,725 feet high. In the north, a range known as the *Hoang-hi* runs east and west. In the north-east the surface is rugged, broken and mountainous. The surface gradually slopes from the *Drakensberg* to the *Limpopo*. The country is watered by the *Rivers Vaal* and *Limpopo*, with their tributaries. The *Vaal*, when united with the *Nu-Garier*, forms the large *Orange River*. Both these rivers rise on the "Mount Axx Sources," a high summit of the *Drakensberg*. The *Vaal* forms the southern boundary of the Transvaal. The *Limpopo*, sometimes called the *Crocodile River*, rises among the *Magliesberg*, and enters the Indian Ocean a few miles north of *Delagoa Bay*. Its chief tributary is the *Olifant* or *Elephant River*. The *Limpopo* is shallow, and navigation is impeded by a double bar at its mouth.

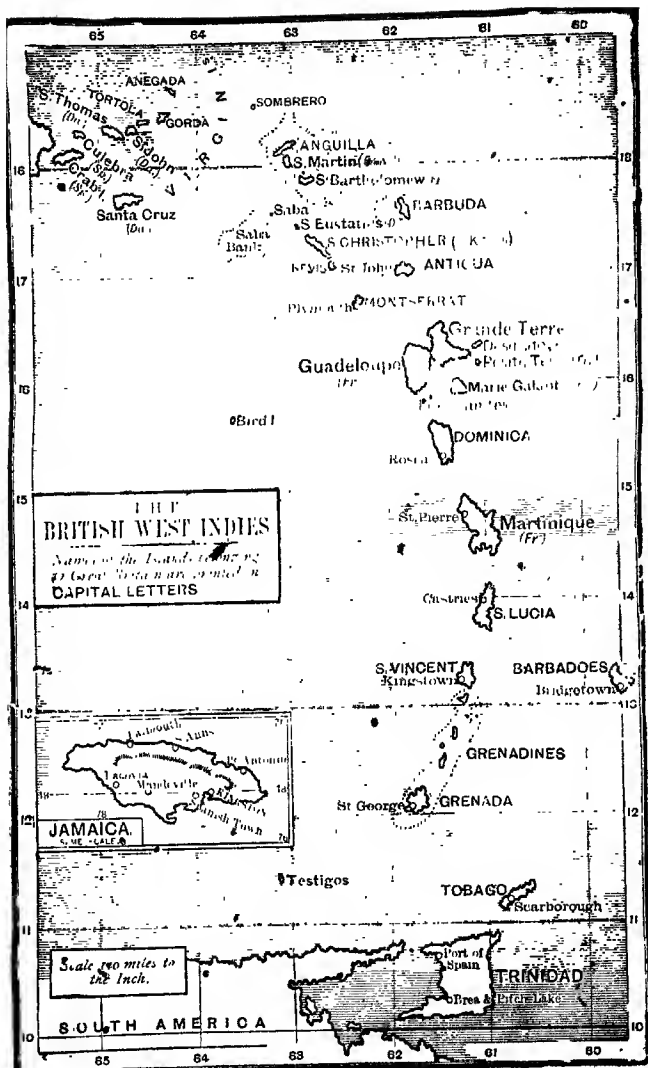
**Climate and Soil.**—Being situated at a high elevation, the climate is pleasant and healthy, and well adapted to Europeans. It is moister than that of the *Orange Free State*, and heat and cold vary considerably according to elevation. Both climate and soil are favourable for agriculture. Where the soil is suitable for cultivation it is very fertile, but agriculture in some parts labours under serious drawbacks. Vegetation is richer than in the *Orange Free State*, and











parts of the Transvaal are at a lower elevation than that province.

**Productions.**—Until the discovery of gold and other metals, the country was entirely pastoral, *agriculture* and *stock-rearing* being the chief industries, but although the Boers, or Dutch inhabitants, are still chiefly occupied on the land, *mining* constitutes the chief wealth of the country. *Gold* has been worked in the Lydenburg district since 1870, but its discovery in recent years in large quantities in the district called the “Rand” has entirely changed the prospects of the Transvaal, and caused many thousands of Europeans to immigrate, and build the large town of Johannesburg, containing 237,000 inhabitants. Previous to the war, the output of gold amounted to £12,000,000 annually; it is now £38,650,000, while the output of diamonds is £1,600,000. There is abundance of *coal* and *iron*. *Silver*, *lead*, *copper* and *cobalt* are also known to exist, and are mined to some extent. Large numbers of sheep are raised, *wool-growing* being still of great importance. *Stock-rearing* is also largely carried on, as is also *ostrich-farming*, and in parts *fruit* and *grain* are largely grown.

The **exports** are chiefly the produce of mining and farming, and include *gold*, *diamonds*, *wool*, *horses* and *mules*, *skins* and *hides*, and *tobacco*. The **imports** are chiefly *machinery*, *clothing*, *animals*, *chemicals* and *dynamite*. The trade of the Transvaal showed a rapid decline after the outbreak of the war in 1899. According to the latest returns, the imports from the United Kingdom are over £5,000,000 and the exports over £300,000.

**Means of Communication.**—There are over 2,700 miles of railways connecting the Transvaal with Durban, Delagoa Bay, and the Cape. Delagoa Bay is the natural outlet, and there is a line directly connecting Pretoria with the port of Lourenço Marquez, passing through Komati Poort, where the Portuguese and Transvaal frontiers meet. Another main line connects Pretoria with Johannesburg and Bloemfontein, while a third important line, connecting Cape Town with Kimberley and Bulawayo, runs along the western border. It is now possible to make a complete railway tour of South Africa, entering at Cape Town and quitting at Durban or Lourenço Marquez. There is good telegraphic communication between the chief towns.

**Towns.**—*Pretoria*. Under the late Republic this was the

centre of political life, and is now the seat of the new government of United South Africa. It is at a lower elevation than Johannesburg, and is not so healthy. It possesses some good buildings, and is enclosed by hills. It lies in the centre of a district formerly engaged in the ivory and the ostrich feather trades. Population about 42,600. *Johannesburg*, the largest town in the Transvaal and the second largest in South Africa, lies in the centre of a large gold-mining district, is situated at a high elevation, and enjoys a remarkably fine climate. It is well laid out, and has some good brick buildings and wide streets. Its growth has been very rapid, and it now possesses a population of 237,220. *Potchefstroom* in the south-west was the old capital. Other towns are *Lydenberg* and *Barberton*, around which are gold mines, *Utrecht*, *Bloemhof*, and *Rustenburg*.

#### ORANGE FREE STATE.

**Boundaries and Extent.**—The Orange Free State lies between the Transvaal in the North and the Cape of Good Hope in the South, and between Basutoland and Natal on the East, and Griqualand on the West. Its shape is nearly oval, its size a little larger than Portugal, and it is enclosed by the Vaal River on the North, the Orange River on the South, and the Drakensberg Mountains on the East. The area is about 50,000 square miles, and the population 530,000.

**Climate and Soil.**—The climate is remarkably dry, and is well suited to people suffering from pulmonary complaints. Thunderstorms are of frequent occurrence in summer, and severe cold is sometimes experienced in winter. In places there is great scarcity of water. A large part of the country consists of the rolling plains of the Veldt; but in the eastern part the soil is extremely fertile, and some of the best grain in the world is grown there.

**Productions.**—The colony for the most part being especially adapted for pastoral pursuits, large numbers of *sheep*, *cattle*, and *horses* are raised. *Grazing* and *agriculture* form the chief industries of the Boers. *Grain* of all kinds is largely grown in the east, and *fruits* of many varieties are now cultivated with much success. *Ostrich farming* is largely and lucratively carried on. *Diamonds*, *garnets* and other *precious stones* are mined in the west, as is also some gold. There are large

and rich coal-beds, but this mineral is not yet mined to a large extent.

**Trade.**—The exports are *wool, hides, ostrich feathers, diamonds, gold, grain and fruits* of different kinds. The imports are chiefly *manufactured goods*. The trade is chiefly with the Transvaal and the Cape of Good Hope. Produce sent abroad is shipped at Port Elizabeth or other towns in the Cape of Good Hope. The imports from the United Kingdom now amount to about £500,000.<sup>1</sup>

• **Means of Communication.**—There is a railway line, connecting the capital, Bloemfontein, with Port Elizabeth, Cape Town, and other towns in the Cape of Good Hope, and with Johannesburg and Pretoria in the Transvaal. Another line in the north-east connects Harrismith with Natal.

**Towns.**—*Bloemfontein* (meaning Flowery Fountain) is the chief town. It is pleasantly situated, being surrounded by low hills 200 to 300 feet high, and on this account is somewhat warmer than other towns. It is a well-built and thriving town, and contains numerous English residents in a population of nearly 28,000. Other important towns are *Kronstad, Ladybrand, Harrismith, and Winburg*.

**The Central Region of Africa.**—The Central Region partakes of the character of a lofty table-land having numerous lagoons and creeks during the rains, but, on the whole, is wanting in rivers of permanent volume and navigable channels. It has, however, some large lakes. Although strictly tropical, the elevation of this table-land confers on many portions of it the *climate* of the temperate zones; and where water is present the country is fine and fertile.

#### **RHODESIA.—THE BRITISH SOUTH AFRICA COMPANY.**

Rhodesia has an area of 450,000 square miles and stretches from the Transvaal in the south to the Belgian Congo and German East Africa in the north. On the west are *Angola and Bechuanaland*, and on the east *Portuguese East Africa, Nyasaland and German East Africa*. The river *Zambesi* divides the country into Northern and Southern Rhodesia; the former consisting of the whole of the British sphere between the Portuguese settlements, German East Africa, and the

<sup>1</sup> Since 1909 only figures for the direct trade with the United Kingdom have been given by the Board of Trade.

Congo, except that part which, under the name of the *Nyasaland Protectorate*, is under direct Imperial control; Southern Rhodesia consists of *Mashonaland* and *Matabeleland*. *North-Eastern* and *North-Western Rhodesia*, by an Order in Council, 1911, became Northern Rhodesia.

Communication is effected by means of public roads, of which nearly 2,500 miles have been already constructed, while the *Bechuanaland Railway* reached *Bulawayo* in 1897, and a line from Beira, through Umtali to Salisbury, has been constructed. There are 1,856 miles of telegraph, with 2,583 miles of wire, in Northern Rhodesia. The Transcontinental Company has extended its line from *Blantyre* to *Karonga*, at the north of Lake Nyassa, and southwards through *Tete* to *Umtali*, so that the capital of the Central African Protectorate is in direct communication with Cape Town and London. The projected line from Bulawayo to the southern end of Lake Tanganyika has been carried past the Victoria Falls, and extends to the Congo border.

The soil and climate are well suited for European *cereals* and *vegetables*; while many trees, shrubs, and plants, peculiar to sub-tropical regions, may be cultivated. *Fruit* and other useful trees have been introduced. *Tobacco*, *india-rubber*, *indigo*, and *cotton* grow wild. The forests produce an abundance of hard timber, which is being extensively felled for building purposes. In addition to *gold*, *silver*, *copper*, *coal*, and *tin*, *plumbago*, *antimony*, and *arsenic* have been discovered. North of the Zambesi the country has scarcely been prospecting, but *coal* and *copper* and other minerals have been discovered. The North Charterland Exploration Company holds a grant of 10,000 square miles in the north, and its operations include trading, agriculture, and stock-breeding, while a new industry is springing up in fibre for rope-making purposes.

The seat of government is Salisbury, the capital of Mashonaland, the chief commercial centre being Bulawayo, the capital of Matabeleland.

#### THE "EAST AFRICA PROTECTORATE.

A great portion of this vast region consists of pasture lands, or barren wastes, but there are not lacking extensive districts of great natural fertility on the coast, as well as in the interior.



Mombasa, which is connected with Europe by telegraph, is the chief port of the Protectorate, and possesses, perhaps, the finest harbour on the east coast of Africa. The capital is Nairobi.

The principal exports are *ivory, rubber, grain, live-stock, gums, orchella weed, sesame, ebony, borites* (poles and rafters), *rhinoceros horn, hippopotamus teeth*, etc.; the principal imports are *piece goods, rice, grain, and flour, building materials, European provisions*, etc.

#### THE UGANDA PROTECTORATE.

Uganda proper lies on the north-west shore of Lake Victoria, between 500 and 600 miles in a direct line from the nearest point on the east coast of Africa. It is situated on, and to the north of the equator. Usoga lies further to the east on the north shore of the Lake. Ungoro is to the north-west of Uganda, and extends to Lake Albert. Koki is to the south-west of Uganda. The total population of the protectorate is estimated at nearly three millions.

The capital of Uganda is Kampala, but the centre of the Protectorate Administration is at Entebbe, twenty-five miles off on Lake Victoria. The exports are *hides and skins, rubber and ivory*. The principal imports are *provisions, textiles and metal goods*. The Uganda Railway, completed in December, 1901, runs from Mombasa, on the coast, to the terminus on Lake Victoria Nyanza. There is a service of steamers on Lakes Victoria Nyanza and Albert Nyanza, belonging to the railway. The Busoga railway, opened in 1912, runs from Jinja to a point on the Nile.

#### THE ZANZIBAR PROTECTORATE.

The Zanzibar dominions are now confined to the island of Zanzibar and Pemba, and a ten-mile coast line from Wanga to Kipini, together with the islands of Lamu, Manda, and Patta, and the ports of Kismayu, Brava, Merka, Magdisho, each with a radius of ten miles, and the port of Warsheikh, with a radius of five miles. The Zanzibar dominions, nominally under the sovereignty of a Sultan, are under the administration of the British Government through the High Commissioner and a British Resident, who are subject to the Colonial Office. The City of Zanzibar, on the island of the same name, is the largest town in East Africa, and possesses a



## EGYPT.

Egypt is a vast but ill-defined area of north-eastern Africa, which contains the basin of the Nile for about 800 miles above the delta. A British Protectorate was declared over Egypt in December, 1914, and the country, which had been ruled by a Khedive as a dependency of the Turkish Empire, was given into the charge of a Sultan who should rule according to British advice. The *Isthmus of Suez* is in Egyptian territory, and, since the opening of the Suez Canal, the control of this work and its approaches has been necessary to the security of the vast British commerce which uses it.

The greater part of the country is desert, the only cultivated and inhabited parts being those where the annual flooding of the Nile provides the necessary water for agriculture. By means of a dam at Aswan and barrages at Assiut and Zifti, large areas are now irrigated throughout the year, and three sets of crops can be raised as the result. The chief crops are cereals; the summer crops, cotton, sugar and rice; and the winter crops, rice, maize and millet.

The foreign commerce of Egypt is mainly with Great Britain. The exports to the United Kingdom, chiefly *raw cotton* and *cotton seeds*, are of the yearly value of £54,000,000.

The principal imports from the United Kingdom, mainly *cotton goods*, *coal*, *iron* and *machinery*, reach £22,000,000.

Alexandria, in the north-west of the Nile delta, is the chief seaport. Cairo, at the head of the delta, is the capital and largest city. There are lines of railway connecting the cities of the delta country with one another and with the Suez Canal.

The Suez Canal connects the Mediterranean Sea with the Gulf of Suez, and thus with the Red Sea. This canal was opened for traffic in 1869, having been ten years in course of construction, at a cost of £20,000,000. The surface of the country through which the canal passes is very low, and, in parts, beneath the level of the sea. These depressions, now filled with water, are the lakes in the course of the canal.

The whole length of the canal is ninety miles, of which sixty-six are canal proper, and twenty-four are lakes. The depth of the canal is thirty feet, and its width is a hundred and twenty feet. Every five or six miles are side basins, where large vessels can moor for the night. The channel

through the lakes is marked by iron beacons, set at short distances from one another. The Suez Canal is, with the exception of the Corinth Canal, the only great canal in the world built without locks.

At the northern end of the canal is **Port Said**, a great coaling station. Its harbour is artificial, being protected by breakwaters of concrete blocks. The harbour contains three great basins, with piers and warehouses. At the southern extremity of the canal is Suez, a much smaller place. About midway of the canal is Ismailia, a small railway town. All three of these places owe their existence to the canal. All movements of ships are regulated from these towns by telegraph. Three-quarters of the total shipping using the canal is British.

The Anglo-Egyptian Soudan, reconquered in 1898, has large areas suitable for wheat and cotton, and large forests of valuable trees, including *ebony* and *rubber*. The south is also rich in minerals. The chief imports are *clothing*, *coal* and *railway material*, and the chief exports, *gum*, *ivory* and *feathers*. The chief towns are **Khartum** and **Omdurman**. Khartum is connected by rail with Egypt, and the line is being extended southwards. There is also a line connecting Atbara Junction with the Red Sea at Port Sudan.

#### BRITISH SUBJECT COUNTRIES IN THE PACIFIC OCEAN.

The crown colony of **Fiji** consists of a group of islands over 200 in number, of which about eighty are inhabited. The total area of the group is rather greater than that of Wales, with a population of 139,000. The largest island, **Viti Levu**, is about the same size as Jamaica. **Vanua Levu**, the second in size, is as large as Devonshire. These islands are mountainous and well watered, enjoying a charming climate. The chief productions are *sugar*, *maize*, *cocoa-nuts*, *bananas*, *rice* and *tea*. The exports are *sugar*, *copra*, *fruit*, *turtle-shell* and *tea*. The chief imports are *machinery*, *textiles* and *hardware*. The chief towns are **Suva**, the capital, on the south coast of Viti Levu, and **Levuka**, on the small island of Ovalau.

**British New Guinea**, which comprises the south-eastern part of the island of that name, has an area about equal to Great Britain; it is now, under the name of the **Territory of Papua**, administered by the Australian Commonwealth.

There are a large number of scattered islands in the Western Pacific which have been taken under British protection, and a British high commissioner appointed to take charge of them. His jurisdiction includes the following groups :—The Tonga or Friendly Islands, the Gilbert and Ellice Islands, the British Solomon Islands and others. They are mostly of coral formation, most have large numbers of cocoa-nut trees, and some have valuable deposits of guano.

The Cook Islands are now administered by New Zealand and the New Hebrides by an Anglo-French commission.

## CHAPTER VI.

### THE BRITISH WEST INDIES, ETC. <sup>1</sup>

**General Remarks.**—The British West Indies comprise all the island possessions of the United Kingdom situated between North and South America. They are divided into six groups, each under a governor. (1) The Bahamas; (2) Barbados; (3) Jamaica and Turks Islands; (4) Leeward Islands; (5) Trinidad with Tobago; (6) Windward Islands.

Together these have an area of about twelve thousand four hundred and fifty square miles, and a population of one million seven hundred and twenty thousand. Attention has lately been paid to other products besides sugar and rum, such as cocoa and nutmegs in *Trinidad*, tobacco and fruit in *Jamaica*, rubber, cotton and tobacco in *Tobago*.

**Climate.**—The climate is tropical, and the range of temperature very small. From August to October, the rainy season, hurricanes are frequently experienced. The driest season is from December until April. On account of the prevailing trade winds, the Atlantic coasts of the islands are generally rainier than the west, and forest-covered, while the harbours are spoilt by the continual surf. The result is that the most important towns are generally on the west. On the whole, the climate is *healthy* except in the rainy seasons, when fevers are prevalent.

**Commerce.**—The West Indian trade is chiefly shared between the Mother Country and the United States, as follows :

The imports from the United Kingdom were valued in 1917 at £2,360,000 sterling.

<sup>1</sup> The exports to the United Kingdom consist chiefly of :—

Sugar .. .. .	£1,620,339	Dye Stuffs .. ..	£116,473
Cocoa .. .. .	894,100	Bananas .. .. .	130,476
Rum .. .. .	373,488	Coffee .. .. .	123,273

The exports to the United States are :—

Sugar .. .. .	£1,400,000	Cocoa .. .. .	£195,000
Bananas .. .. .	360,000	and other articles to	
Coffee .. .. .	268,000	the total value of	£2,600,000

<sup>1</sup> Only figures for the separate groups are now available, but though the amounts given are generally too small, they are correct in proportion.

The imports from the United States comprise :—

Food .. ..	£1,000,000	Oils .. ..	£39,000
Timber .. ..	160,000	Leather .. ..	26,000
together with a great variety of manufactured articles to the total value of £1,800,000.			

**The Bahamas.**—The Bahamas are a group of six hundred islands to the south-east of Florida and the north-east of Cuba. Many of these are mere uninhabitable rocky peaks, and only about twenty of them are of any commercial consequence. These are generally level, of coral limestone, with a sandy soil.

*Nassau*, on the island of New Providence, is the capital. Other important islands of the group are San Salvador, Grand Bahama, Long Island, Harbour Island, Great Inagua, and the Andros Islands.

The products of the soil of these islands consist of *oranges*, *pine-apples*, *olives*, *mahogany*, *ebony*, *satin-wood*, and preserved *fruits*; the sea is made to yield its *sponges*, *turtle-shells*, and *salt*. Under the encouragement of the Government, the cultivation of *sisal hemp*, a native fibre of Yucatan, is increasing. Hitherto the *export of sponges* has been the leading source of income in the Bahamas. A considerable amount of profit is derived from American tourists, for many of whom these islands afford a winter resort. There is direct *steam-ship communication* with New York. The population of sixty thousand is two-thirds negro. *San Salvador* is said to have been the land first sighted by Columbus on his voyage of discovery in the year 1492.

**Trinidad.**—Trinidad, seven miles from the coast of Venezuela, at the mouth of the Orinoco River, is the most southerly of the islands of the West Indies.

Port of Spain is the capital and chief centre of commerce. The principal products are *sugar*, *cocoa*, *molasses*, *rum*, *cocoa-nuts*, *timber*, *fruits*, and *asphalt*, or mineral pitch. On the island is a remarkable asphalt lake, 110 acres in extent, containing a vast supply of this mineral.

**Tobago** has plantations of *rubber*, *cotton*, and *tobacco*.

**Barbados.**—Barbados, the most easterly island of the West Indies, is about two hundred and fifty miles north-east of Venezuela, and is said to be the most densely populated island in the world. The *surface* is irregular, but the *soil* is

very productive. The forests have been cut away, so that all the available land may be devoted to one staple crop—*sugar*. Even tropical fruits have disappeared to make room for sugar-planting, until Barbados is now dependent upon the neighbouring islands for its fruit supply. The consequence of this one-crop system has been ruin to the planters, and efforts are being made to vary the products by introducing cotton, tobacco, indigo, and arrowroot. Most of the sugar is exported to the United States.

**Bridgetown**, the seat of government, with a population of sixteen thousand, is a very important *commercial port*. It is a station of the West Indies and Panama Telegraph Company, the head-quarters of steamship lines to Europe and to the United States, and a port of call for merchant ships in general. It is also the head-quarters of the British forces in the West Indies. The Island of Barbados is less than the Isle of Man, and the density of the population is nearly twelve hundred to the square mile.

**Jamaica**.—Jamaica, the largest and most valuable British possession in the West Indies, is in the Caribbean Sea, one hundred miles to the south of Cuba. It is about twice the size of the county of Lancashire, but contains only about one-sixth as many people, three-fourths of whom are negroes. The centre of the island is lofty and mountainous, so that many streams descend to the coast. The *soil* is rich and very productive, most of the staple tropical products being raised. The chief *exports*, in order of importance, are *fruit*, *dye-woods*, *sugar*, *coffee*, and *rum*; many Chinese and coolies are employed in the plantations. The chief customers are the United States and the United Kingdom, the former taking four times as much of the exports as the latter, while the United Kingdom supplies half the imports, and the United States the remainder. Although situated at a distance of five hundred miles from Jamaica, **Turks Islands** and the neighbouring island of **Caicos** are attached to the colony. The only export worthy of mention from these dependencies of Jamaica is salt.

**Kingston**, the seat of government, largest town and port, with Port Royal the *naval station*, has a population of 57,379; the next in importance being **Spanish Town** and **Port Antonio**.

The opening of the Panama Canal increased the importance of Jamaica.



**Leeward and Windward Isles.**—The Caribbean Sea is separated on the east from the Atlantic Ocean by many small islands, called the Lesser Antilles. The northern group is called the *Leeward Islands*, while the southern group is known as the *Windward Islands*.

**The Leeward Islands.**—The Leeward Islands under British authority consist of the five presidencies of

1. *Antigua*, with *Barbuda* and *Redonda*;
2. *St. Christopher* and *Nevis*, with *Anguilla*;
3. *Dominica*; 4. *Montserrat*; and 5. The *Virgin Islands*.

The colony contains over one hundred and twenty-seven thousand people.

Antigua is the most important of the Leeward Islands, and is in direct steamship communication with Britain, New York, and Canada, but Dominica is the largest. The products are principally *sugar*, *molasses*, *rum* and *cotton*. *Pine-apples* are grown in Antigua and *limes* in Montserrat.

**The Windward Islands.**—The Windward Islands lie between Martinique and Trinidad, and consist of *Grenada*, *St. Vincent*, the *Grenadines* and *St. Lucia*. Their combined population is one hundred and fifty-seven thousand, mostly negroes and coolies. *Sugar*, *rum*, *cotton*, *cocoa*, *spices* and *arrowroot* are exported.

**British Honduras.**—British Honduras, or Belize, is situated on the shore of the Caribbean Sea, between Yucatan and Guatemala. The country is not developed, and the population is scanty, there being about forty thousand people in an area almost equal to that of Wales. The chief industry is cutting and exporting timber, chiefly *mahogany* and *logwood*, besides *cedar* and *rosewood*. *Bananas* are also grown and exported. Belize is the chief town.

**British Guiana.**—British Guiana includes the three counties of *Demerara*, *Essequibo*, and *Berbice*, so named from the principal rivers. The boundary between the colony and Venezuela remained for many years unsettled. The total area is a little over ninety thousand square miles, that is, one and a half times the area of England and Wales, but the population is very small, nearly equal to that of Hertfordshire, and the climate is not healthy. The cultivated part of the country is situated along the sea-coast and a short distance up the rivers. The chief product is sugar, of which

the variety known as *Demerara crystal* is the finest in the world. *Cotton* of excellent quality is also grown. *Cocoa-nuts*, *coffee*, *rum*, *molasses*, and *butter* are also produced.

The leading exports are :—

*Sugar* two and a half millions sterling ; *diamonds*, value thirty-eight thousand, *balata*, £101,547 ; *rum*, *timber*, and *molasses* make up the remaining one and three-quarter million pounds.

The chief imports are *textiles*, *flour*, *manure* and *machinery*.

*Georgetown*, the capital and port, has a population of nearly forty-nine thousand.

# BOOK III.

## FOREIGN COUNTRIES.

### CHAPTER I.

#### EUROPE GENERALLY.

**Position and Size.**—Europe lies almost wholly within the north temperate zone, and its coast-line is rendered so irregular by the indentation of seas and gulfs, and the projection of peninsulas and promontories, that an idea of its configuration can best be obtained by a study of the map.

Within its area of three million seven hundred and twenty-five thousand square miles there is every diversity of surface. Devoid of immense plains, like those of America, Europe is not marked with the same uniform flora and fauna which characterise the New World. Lacking those wide deserts and lofty table-lands which occupy so much of the surface of Asia and Africa, Europe is not marked by those strong contrasts which belong to the greater part of the Old World.

**Surface.**—The mountain systems of Europe, lying chiefly in the south, confer upon its southern section an irregular and hilly aspect; while the northern section, from the North Sea through the Netherlands, Prussia and Russia, is generally flat, or but little interrupted by elevations or depressions. We have, thus, a southern region, characterised by its *mountains, table-lands*, and intervening *valleys*, and a northern region, marked by the prevalence of *pasture plains* and *lakes*. Except in the extreme north, the greater part of the surface has been more or less improved and cultivated; and, although large tracts are still occupied by natural forests, heaths, sandy wastes, and marshes, yet, on the whole, the natural aspect of Europe has been more modified by man than that of any other continent.

**Mountains.**—Commencing at the west we have

1. The Iberian System, including the *Pyrenees, Cantabrian, and Toledo* mountains, as well as the *Sierras Morena* and

*Nevada*, which give character to the rocky table-land and Peninsula of Spain. They rise in many parts above the snow-line.

2. The **Alpine System** comprehends the whole of those lofty mountains which radiate in ranges, from Switzerland as a centre, and confer on southern Europe its marked features. It comprises the *Alps* proper, which, under several local names, extend from the shores of the Mediterranean Sea to the Table-land of Bohemia, including the *Apennines*, traversing the entire length of the Italian peninsula and Sicily, and including the still active volcano of *Etna*; the *Balkan* and *Pindus Ranges*; and, lastly, the *Carpathians*.

Many of the **Passes of the Alps** are practicable even at great elevations. The principal are set out in the following table:—

PASSES.	FROM	TO	HEIGHT FEET.
*Mont Cenis	Chambéry ( <i>France</i> )	Turin ( <i>Italy</i> )	6,770
*Simplon	Brieg ( <i>Switzerland</i> )	Domodossola ( <i>Italy</i> )	6,600
*St. Gothard	Andermatt "	Conio ( <i>Italy</i> )	7,000
*Arlberg	Zürich "	Innsbruck ( <i>Austria</i> )	7,000
St. Bernard	Martigny "	Aosta ( <i>Italy</i> )	
Splügen	Chur "	Isola "	7,000
Stelvio	Landeck ( <i>Tyrol</i> )	Meran ( <i>Tyrol</i> )	9,200
*Brenner	Innsbruck "	Botzen "	4,600
*Semmering	Vienna ( <i>Austria</i> )	Trieste ( <i>Austria</i> )	3,250

\* Passes marked thus are pierced by railway tunnels.

3. The **Scandinavian System** extends in a north-easterly direction through Norway and Sweden from the Naze to the North Cape, a distance of over eleven hundred miles. It consists of a series of high, open hills (*fjelds*) rather than of a continuous mountain ridge. These mountains are rich in veins of *iron, copper, lead, zinc, and antimony*.

4. The **Ural Mountains**, which form the natural division between Europe and Asia, are rich in the precious metals and other minerals, *gold, platinum, iridium, malachite, and diamonds* being among the geological treasures of this range.

5. The **Caucasus**, between the Black Sea and the Caspian, is a lofty massive range said to be rich in metals.

**Geology.**—Geologically, Europe presents illustrations of every system, from the deepest-seated granites to the latest

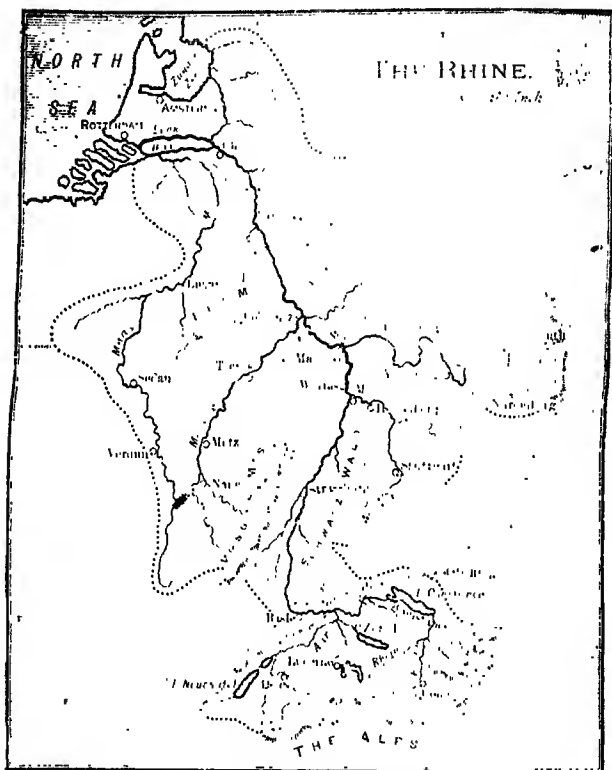
volcanic lava or the most recent alluvia. From the broken and undulating nature of the country, these formations are repeatedly brought to the surface in all the northern and western districts, northern and eastern Russia being the only areas where formations are continuous over wide areas. In this way, the mineral treasures of Europe become more readily available; and these consist, in general terms, of granites, marbles, limestones, coals, ironstones, gypsum, rock-salt, sulphur, sandstones, fire-clay, pottery clays, sands, flints, etc.; also of iron, copper, tin, lead, silver, mercury, and other useful metals. This abundance of useful minerals and metals enabled the inhabitants of Europe to engage at an early period in the arts, manufactures and commerce; and it is to this same abundance that the present superiority in mechanical, manufacturing, and commercial industry is mainly to be attributed.

**Rivers.**—With the possible exception of the Dwina, on which the port of Archangel stands, none of the Arctic rivers of Europe are of much importance commercially, being usually ice-locked from September to June. The White Sea and the Baltic are, however, connected by means of canals which unite the northern rivers of Russia.

The Rhine, the "beautiful Rhine" of the Germans, springs from the Alpine glaciers of *Mount St. Gothard* at an elevation of about 7,600 feet; it descends rapidly to *Lake Constance*, 1,250 feet above sea level, thence through the Falls to *Basle*, 800 feet above the sea; and then flows, with a navigable course, to the North Sea, which it enters by the largest of European deltas.

Besides the goods conveyed up and down the Rhine by steamers and sailing vessels, immense quantities of timber are sent down in the form of *rafts*. The smaller rafts from the Upper Rhine and its tributaries used to meet a little below Andernach, under a wooded mountain. The Rhine here forms a bay, where the pilots were accustomed to unite the small rafts floated down the tributaries into the Rhine, and to construct those very large floats, which were navigated to Dordrecht, in Holland, and sold. Of late years, however, the practice of constructing very large rafts has fallen into disuse.

The principal *tributaries* of the Rhine are the Aar, Moselle,



and Maas on the left bank; the Main, Lahn, and Ruhr, on the right bank.

The Rhone rises among the Alps at an elevation of 5,500 feet; and, having an actual course of only five hundred miles, is, necessarily, one of the most rapid rivers in Europe. It discharges itself into the Mediterranean by two main mouths; and, when in high flood, projects its current with such force that its fresh waters can be skimmed from the surface several miles out at sea.

The Danube rises in the *Black Forest* at an elevation of nearly 3,000 feet,\* and has a winding course of fifteen hundred miles. Originating in the union of several mountain streams, it is first known as the Donau, or Danube, in the Duchy of Baden, from which it runs through an alpine country to *Ulm*, and thence to *Passau*, it traverses the Plain of Bavaria. From *Passau* to *Vienna* it runs through a second hilly region, but the remainder of its course is through a flat country, except on approaching the rocky defile of the "Iron Gate," where, however, the rocks have been blasted, and the bed of the river canalized so that navigation is possible throughout the greater part of the year. It enters the Black Sea by three main mouths. The Danube, and its three navigable tributaries, the *Theiss*, *Drave*, and *Save*, form important channels of internal communication for Eastern Europe, an importance which has been greatly enhanced by the adoption of steamers fitted to the peculiarities of their currents.

The *Volga*, which rises in the *Valdai Hills*, at an elevation of 550 feet, and after a long but winding course of 2,400 miles, during which it receives many important tributaries, such as the *Kama* and *Viatka*, falls by two main mouths into the Caspian, which is eighty-five feet below the level of the Black Sea. The *Volga*, which is the largest river in Europe, has a fall of only 633 feet during a course of 2,400 miles. It is the great internal water-way of European Russia.

**Lakes.**—In Europe there are two main lake-regions, a highland and a lowland.

The highland lake region embraces the picturesque Alpine lakes of Switzerland and Italy. The larger of these are on the Swiss side of the Alps. The chief are set out in the table below:—

LAKES.	AREA, SQ. M.	ELEVATION, FEET.	
Geneva, or Leman	240	1,230	} Situated on the northern or Swiss side of the Alps.
Constance, or the Bodan See	228	1,250	
Neuchâtel	114	1,440	
Lucerne	98	1,430	
Zürich	74	1,330	} Situated on the southern or Italian side of the Alps.
Garda	182	320	
Maggiore	150	680	
Como	66	685	

The lowland lake-region is spread over areas depressed but little below the surrounding country. These lakes stud the Baltic provinces of Russia, Prussia, and Sweden. All are, for the most part, tame and unattractive. The lakes of Finland, situated on a low plateau, are drained by rivers broken by falls which are being utilised for power. The most notable of these are set out in the following table:—

LAKES.	AREA, SQ. MILES.	DRAINAGE RIVER.	
Ladoga ..	6,330	Neva ..	Russia.
Onega ..	3,280	" ..	"
Saima ..	2,000	" ..	Finland.
Peipus ..	1,250	Narova ..	Russia.
Enara ..	1,200	" ..	Finland.
Wener ..	2,130	Gotha ..	Sweden.
Wetter ..	840	" ..	"
Mälar..	760	Mälar ..	"

**Climate.**—The climate of Europe partakes more of the *oceanic* than of the *continental* character, owing to the nearness of almost every part to the sea. The western side of the continent is in the track of the prevailing westerly winds, and has at once the greatest rainfall and the most equable climate. The southern peninsulas have very warm summers, so dry that irrigation is generally necessary for agriculture, most of the rain falling during the winter months. On the great Central Plain the climate gets drier and more extreme as we go eastward, until almost desert conditions are reached on the north of the Caspian, with hot summers and winters so cold that navigation on the Caspian is frequently impossible on account of the ice.



## CHAPTER II.

### THE REPUBLIC OF FRANCE.

**Position.**—France ranks high among the nations in the value of her trade with the United Kingdom, the United States holding the first place and Argentina the second. The position of France is especially favourable for commerce. Along its northern coast lies the English Channel; on the west is the Atlantic Ocean, and more than half the southern boundary is on the Mediterranean Sea.

**Area and Population.**—The area of France, 207,000 square miles, is about four times that of England exclusive of Wales, but its population is less than that of the United Kingdom, amounting to 39,602,258 in 1911, since when there has been practically no increase.

**Configuration.**—The northern and western parts of France are portions of the great plain which extends quite across Europe. The southern and eastern parts of the country are mountainous. In these highlands rises the *River Seine*, which flows north-west into the English Channel. The *Loire*, which flows west into the Bay of Biscay, rises in the Cevennes. The *Rhone*, which flows southward into the Mediterranean Sea, rises in the Alps. The *Garonne* flows from the Pyrenees north-west into the Bay of Biscay. France has nearly one hundred rivers which are more or less navigable, and in connection with them is a very complete system of canals.

**Canals.**—The Rhone is connected by the *Canal d'Alsace* with the Rhine, in Germany; by the *Canal du Centre* with the Loire; and by the *Canal du Bourgogne* with the Seine. The *Canal du Midi* joins the river Garonne with the Mediterranean Sea, thus saving the voyage of two thousand miles round the Iberian Peninsula. In the northern part of the republic is a network of canals which connects the main industrial centres, and affords direct communication with the canals and rivers of Germany, Belgium, and the Netherlands. A very complete *Railway system* supplements these water-ways, and connects all parts of the Republic.

**Railways.**—There are upwards of 25,000 miles of railway in France. The main lines, most of which radiate from Paris, are shown in the table on the next page.

RAILWAY.	FROM PARIS TO
1. Northern Railway ( <i>Chemin de Fer du Nord</i> )	Calais, Lille, Ghent, Valenciennes, Brussels.
2. Western Railway ( <i>Chemin de Fer de l'Ouest</i> )	Brest, St. Malo, Cherbourg, Havre, Dieppe.
3. Orleans Railway ( <i>Chemin de Fer Paris-Orléans</i> )	Bordeaux, Orleans, Toulouse.
4. Southern Railway ( <i>Chemin de Fer du Midi</i> )	This line connects Bordeaux with Cette.
5. Eastern Railway ( <i>Chemin de Fer de l'Est</i> )	Strassburg, through Epernay, Chalons, and Nancy.
6. Paris-Lyons-Mediterranean Railway ( <i>Chemin de Fer de Paris-Lyon-Méditerranée</i> )	Dijon, Macon, Lyons, Marseilles, Toulon, Nice, Genoa, Cette, Bordeaux.

**Climate and Soil.**—The climate of France is generally equable. In the northern districts it is not unlike that of the United Kingdom. The extreme south has mild winters, and the warm dry summers characteristic of the Mediterranean countries. On this coast, however, much injury is sometimes done by the hot winds which blow from the deserts of Africa. The soil of France is very fertile, and three-fourths of the area is fit for cultivation.

**Productions.**—The principal crops in the northern part of France are *wheat*, *oats*, and *barley*, among cereals; *potatoes* and *sugar beet*. *Grapes* and *flax* are grown nearly all over the country; but, in the south, *olives*, *tobacco*, *oranges*, and *mulberry* trees used for silk-worm culture, receive attention. In *wine-making*, France stands first among nations, and wine is (after silk) the most valuable export. Owing to diseases among the vines in the eighties the amount produced fell off greatly for a number of years. Now, however, owing to the introduction of American vines, which are immune from disease, the amount is as large as ever. At the same time, the amount imported from Italy and Spain remains comparatively high.

**The Domestic Animals**—*horses*, *mules*, *cattle*, *swine*, and *sheep*—are raised in large numbers; but the animals, as a whole, are much inferior in quality to those of England. In the north, *oxen* are employed in field labour, while in the south *donkeys* and *mules* are much used. The rearing of cattle,

## THE REPUBLIC OF FRANCE.

sheep, and goats receives considerable attention ; and among the lesser industries are bee-culture and poultry-keeping.

The *breeding of horses* is not carried on so extensively as in some other European countries. The *percheron* of Normandy, however, a famous breed, is a draught horse of great strength and endurance.

~~Fruit~~ Fruit and forest trees cover about one-fifth of the area. Among the fruits grown are olives, apples, pears, citrons, figs, and plums. The principal *nuts* are almonds, chestnuts, and walnuts. The forests consist chiefly of *oak, birch, pine, beech, elm, and chestnut* ; the largest forest areas being in the north-east, south-west, and south-east. In the south, the *cork-oak* is carefully cultivated ; and it must not be forgotten that wood is the chief domestic fuel of France.

Compared with other European countries, France is not rich in minerals. The products of the *coal and iron* mines on the southern slopes of the Ardennes, in the north-east of France, are not sufficient for the factory needs of the country, and large quantities are imported. The largest iron mines are around Nancy. *Lead*, the only other metal mined to any extent, is found on the plateau in the centre of the country.

**Industries.**—Although more than half of the people of France are dependent upon the soil for a living, the **manufactures** of the Republic are of greater commercial value than all the other products. The most notable of the manufactures of France are *silk and wine*, of which the annual produce and export are very great. Lyons, on the Rhone, is the centre of the silk industry. The best known French *wines and spirits* are set out in the table below.

WINES, ETC.	LOCALITY.
Claret	of <i>Médoc</i> and <i>St. Estèphe</i> , from the vineyards of the Gironde round Bordeaux.
Burgundy	of <i>St. Emilion</i> , in the ravine of the River Dordogne, both red and white are manufactured in the valley of the Saône, where <i>Dijon, Macon, and Beaune</i> are well-known centres.
Champagne	is made on the banks of the <i>Maine</i> , a tributary of the Seine, where <i>Epernay, Reims, and Villery</i> are the chief markets.
Brandy	is largely distilled in the valley of the <i>Charente</i> to the north of Bordeaux. <i>Cognac</i> is the centre of the industry.

France has also numerous and important manufactures of linen, at *Dunkirk*, *Cambrai*, and other places; of woollen goods, at *Lille*, *Roubaix*, *Rouen*, *Sedan* and *Rheims*; of cotton fabrics, at *Rouen*, *Lille*, *Roubaix*, and *St. Quentin*; of glass and porcelain, at *Sèvres* and *Limoges*; beet sugar, watches and clocks, and of many other kinds of goods.

The fisheries are of great value, and give employment to 150,000 men. The lakes and rivers generally are well stocked. On the coast, *oyster culture* has become an industry of much value, and *sardines* are taken in vast numbers on the coast of the Bay of Biscay. Deep water fishing is carried on to a greater extent than by any other continental nation, French fishing vessels being found on the Iceland, Newfoundland, and other banks.

**Commerce.**—The foreign commerce of France is very great; the chief exports being *wines*, *silks*, and *woollen and cotton goods* of fine quality. The trade is mainly with the United Kingdom, Belgium, Germany, Italy, Spain, the United States, and Switzerland. The imports of raw material are *coal* from the United Kingdom, *copper* from *Chile*, *cotton* from the United States, *coffee* from *Brazil*, *silk* from the *Levant* and the *Far East*.

The value of French exports to the United Kingdom is about thirty-five millions; the chief articles are:—

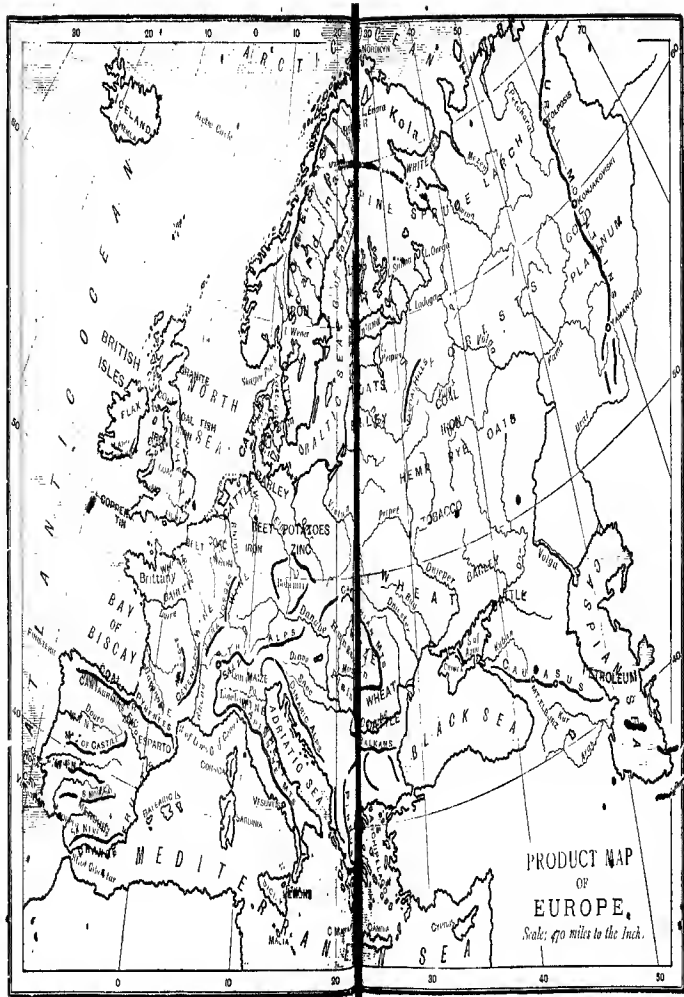
	Millions £		Millions £
Textiles .. .. .	5½	Wine .. .. .	1
Carriages, Automobiles,		Clothing .. .. .	½
etc. .. .. .	½	Silk .. .. .	1½
Butter .. .. .	½	Leather .. .. .	¼

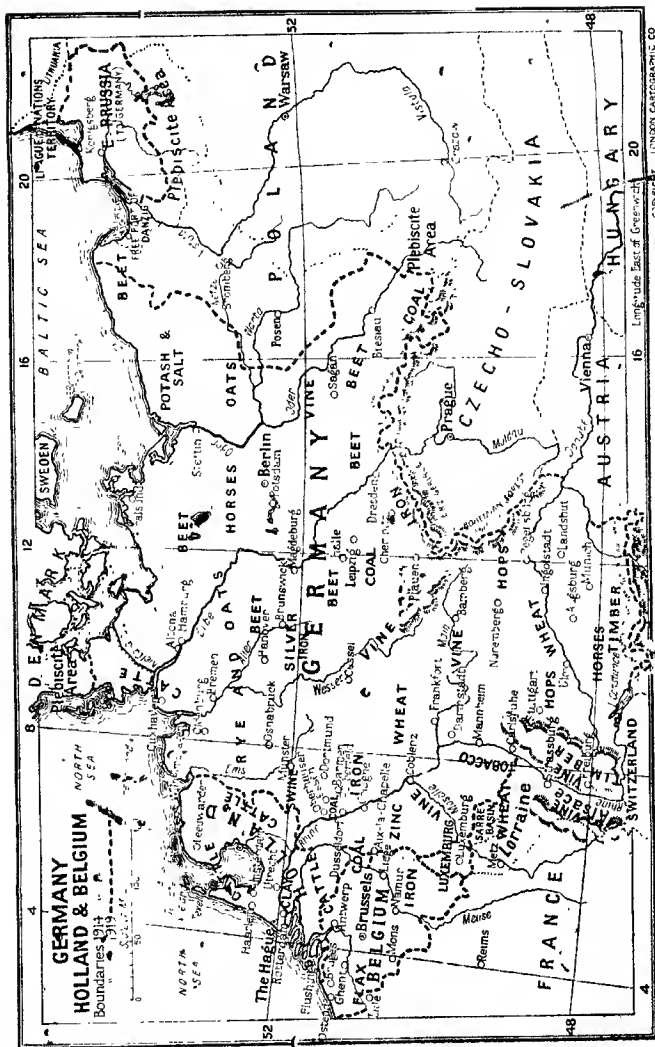
The imports from the United Kingdom, valued at over one hundred and twenty millions, chiefly are:—

	Millions £		Millions £
Coal .. .. .	25	Metals .. .. .	22
Textiles .. .. .	21	Machinery .. .. .	4

**Cities and Towns.**—*Paris*, the capital of France, is, next to *London* and *New York*, the largest and richest city in the world, its population being about half that of *London*. It is situated on the *River Seine*, about one hundred miles from its mouth, and, now that the river has been deepened, it can be







reached by ocean-going steamers. It is the social and fashionable centre of Europe, and is noted for the number and magnificence of its public buildings, and for the artistic beauty of its manufactures of gold, silver, porcelain, pottery, tapestry, and dress fabrics of every description. The canal and railway systems of France converge here, and nearly the whole country pays tribute to the city, as it is the commercial and political centre of the Republic. The *Bourse*, or stock-exchange, of Paris is excelled by those of London, New York, and Berlin only. On the south is the famous suburb of Versailles and on the west Sèvres, noted for its porcelain.

Marseilles is now the second city of France in population, and the *first port* for foreign commerce. It is situated on the Mediterranean coast, and has an immense shipping trade, chiefly with ports on the Mediterranean sea-board, and by way of the Suez Canal with commercial centres in India, China, and Japan, the chief line of steamers being the Messageries Maritimes. Marseilles has great iron ship yards and smelting works for reducing ores from Algeria. *Marine engines, soap, sugar, and chemicals* are manufactured here.

Lyons, the third city of France in point of size, and the first in manufactures, situated at the confluence of the Saône with the Rhone, at a distance of one hundred and fifty miles from the Mediterranean, has a population somewhat higher than Sheffield. It is the centre of the greatest silk-producing district in the world. In manufactures and trade in *satins, velvets, and ribbons* it stands without a rival, as the annual value of the trade is said to be sixteen millions sterling. Although great quantities of raw silk are produced in the Rhone valley, yet, as the supply is not equal to the demand, Italy and China are depended upon to supply the deficit.

Bordeaux, the most important French port on the shores of the Bay of Biscay, is sixty miles from the mouth of the River Garonne. The population of this port is rather smaller than that of Nottingham, and its export trade is chiefly in wines and brandy. The Gironde, as the district around Bordeaux is called, is famed for the production of red wines, and this port is the greatest wine market of France. Its harbour is so shallow that ocean traffic is carried on mainly through *Pauillac*, which is nearer the sea and has a fine harbour. Bordeaux is connected with the Mediterranean by the *Canal*



*du Midi*, which joins the River Garonne to the port of Cetté. Through this canal, it supplies the southern districts with imports derived from the United Kingdom, the United States and South America. Bordeaux does some, *ship-building* and manufactures both *woollen* and *cotton goods*.

Lille,<sup>1</sup> or Lisle, near the Belgian frontier of France, a city having a population less than that of Leicester, is one of the greatest linen manufacturing cities of Europe, and fine goods all known in commerce by the name of the place, *lacc*, *gloves* and *hosiery* are important manufactures here.

Toulouse, an inland city in the south of France, with a population less than Sunderland, situated on the River Garonne, has manufactures of *woollens*, *silks*, *leather*, *tobacco*, and *brandy*. There are also cannon factories here, and it is the western terminus of the *Canal du Midi*.

St. Etienne, a town situated in the Rhone valley, is noted for manufactures of *hardware*, *machinery*, *weapons*, and *silk*.

Nantes, a *seaport* with about the same population as Cardiff, stands at a distance of thirty miles from the mouth of the Loire. It has a considerable export and import trade; it also manufactures *cotton*, *woollen*, and *linen* fabrics, as well as wares of *copper*, *lead*, and *iron*.

Le Havre, on the English Channel, at the mouth of the Seine, is the port of Paris, and, next to Marseilles, is the greatest commercial *seaport* of France, containing about as many people as Plymouth. Most of the export and import trade between France and the United States passes through Havre. Having direct railway communication with Strassburg on the Rhine, Havre is also a transit port for a large portion of the American trade with Germany. The chief line of steamers to America is the *Compagnie Générale Transatlantique*. This city imports raw materials and food for the population of the manufacturing districts in the north of France, and exports manufactured goods. Its numerous industries include *sugar-refining*, and also manufactures of *cotton*, *tobacco*, and *iron*, while *wheat* from the United States is ground at the large flour mills. It is one of the greatest ship-building ports of the world outside of the United Kingdom.

Roubaix,<sup>1</sup> a place on the Belgian border, with a population equal to that of Southampton, manufactures woollen goods.

<sup>1</sup> Towns marked thus were particularly affected by the war of 1914-18.

**Rouen**, on the River Seine, about seventy miles inland, one of the chief manufacturing cities of France, has a population somewhat more than that of Preston in Lancashire. It is the centre of the *cotton industry* of the north of France; but besides cotton goods in great variety, the manufactures of Rouen include fabrics of *silk, wool, and flax*; and it has factories where *steel goods, machinery, and chemicals* are turned out. The Seine is navigable to Rouen, making the city an important ship-building centre.

• **Reims**,<sup>1</sup> one hundred miles to the north-east of Paris, on the railway line from that city to Strassburg, is the chief depot and market for the famous *champagne* wines which are made in the districts around. It has also manufactures of *silk and wool*, and a population somewhat larger than that of Huddersfield.

**Brest**,<sup>1</sup> a port in the extreme north-west, is a strongly fortified city, and one of the principal naval stations of France. Ship-building for the French navy is the chief industry. Brest is connected with America by a submarine cable.

**Toulon**, on the Mediterranean sea-board, is the great naval arsenal of France.

**Dunkirk**<sup>1</sup> is the port for steamers coming to France from the north.

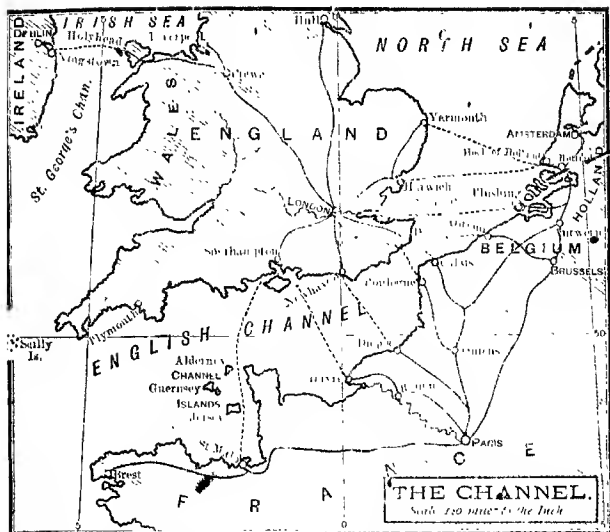
**Nancy**, a town of a hundred and twenty thousand inhabitants, is the centre of the chief *iron-ore* producing region of France, and is engaged in smelting.

**Dijon** is an important point on the route between Paris and the Rhone valley, the road, canal and railway connecting these all passing through it.

**St. Nazaire**, at the mouth of the Loire, is rising at the expense of Nantes as a port for West Indian trade.

**Calais**<sup>1</sup> and **Boulogne**, about nineteen miles from each other, on the coast of the English Channel, are noted ports for passengers to and from the United Kingdom. Steamers ply several times daily between Dover and Calais, and between Folkestone and Boulogne in connection with the South-Eastern and Chatham Railway of England. The sea passage between Dover and Calais, a distance of twenty-two miles, occupies eighty minutes or less; that between Folkestone and Boulogne, twenty-nine miles, occupies ninety minutes.

<sup>1</sup> Towns marked thus were particularly affected by the war of 1914-18.



The other routes between England and France are those of the London, Brighton, and South Coast Railway from New-haven to Dieppe; and the London and South Western Railway from Southampton to Havre or St. Malo.

The FOREIGN DEPENDENCIES OF FRANCE contribute but little to the business life of the world.

**Algeria.**—Algeria, in North Africa, on the Mediterranean coast, is slightly larger than the United Kingdom, and has a population of five and a quarter millions; rather more than three-quarters of a million are Europeans, and the rest are of the native African races. The country is rich in mines of *iron*, *copper*, and *lead*, although these have not been very much worked; and *petroleum* has been found in Oran. Agriculture and sheep-raising are the chief industries. The exports and imports are mostly to and from France. There are now 2,793 miles of railway and 200 miles of tramway.

**Tunis.**—Tunis has an area equal to about nine-tenths that of England, excluding Wales, with a population of some two

millions, one hundred and thirteen thousand being Europeans. It is a *protectorate* of France, though the local laws are administered by Turks. The exports are chiefly *olives* and *cereals*, which are sent to Italy. The capital, Tunis, the largest city in the Barbary States, has a very mixed population of about 277,000. This city has manufactures of *silk* and *woollen goods*.

Other African Dependencies.—Besides Algeria and Tunis the French claim a large part of Africa from the Congo northward, and from Egypt westward to the Atlantic, the main divisions of which are now known as French West Africa, occupying one and a half million square miles; Sahara, occupying another similar area, and French Equatorial Africa, formerly French Congo, a region of nearly three-quarters of a million square miles.

French West Africa is now divided into five parts: Senegal, Upper Senegal and Niger, French Guinea, the Ivory Coast and Dahomey. The chief exports are *oil-seeds* and *rubber*, and the chief imports, *food* and *textiles*.

French Equatorial Africa, between the Congo and the German Kameruns and stretching northwards to Lake Chad, is a vast undeveloped region which exports *rubber*, *ivory*, *cabinet woods*, *palm oil* and other tropical produce. There are valuable deposits of *gold*, *copper* and *iron* which have not yet been worked. The chief ports are Libreville and Loango.

On the east is the French Somali Coast, the port of which is Jibutil.

Madagascar.—Madagascar, an island in the Indian Ocean, to the south-east of Africa, has a population of more than three millions, spread over an area nearly double that of Great Britain and Ireland. It exports *cattle*, *hides*, and *rubber*. There are deposits of *iron* in the islands, but they are poorly worked. *Rice*, *cotton*, *spices*, and *sugar* are among the other products. The chief seaport is Tamatave. The capital is Antananarivo. With Madagascar are now included the Comoro Islands, which export *timber* specially suited for railway sleepers.

Réunion.—Réunion, a small island four hundred miles to the east of Madagascar, produces and exports *sugar*, *cocoa*, *coffee* and *spices*.

French Indo-China consists of the eastern third of the Indo-Chinese Peninsula. It has an area of three hundred and

ten thousand square miles and a population of seventeen millions. The five districts into which it is divided are:—Cochin-China, Cambodia, Annam, Tonking and Laos.

The leading product of these states is *rice*, and the trade is chiefly with China; *cotton* and *pepper* are also exported. **Saigon**, the colonial capital, is a place of much commercial importance.

**French India.**—France still holds five dependencies in India, the best known of which are Chandanagore, near Calcutta, and Pondichéry.

**New Caledonia.**—New Caledonia, in the South Pacific Ocean, is a French penal colony, exporting *silver*, *lead*, *nickel*, and *preserved meats* to France. The neighbouring **Loyalty** and **Marquesas Islands** are of no importance commercially.

**Tahiti** is the most important of the French possessions in Oceania. The chief town is **Papeete** and more than half its population is French. On the fertile coast plain tropical fruits are grown, and the chief industries are the preparation of *copra* and *sugar*, which are exported. The chief imports are *textiles*, *wheat-flour* and *metal goods*. It is a calling place for steamers between San Francisco and New Zealand and Australia.

**Martinique and Guadeloupe.**—Martinique and Guadeloupe, two islands in the Lesser Antilles, have a considerable export and import trade with France. Their products are *sugar*, *cocoa*, *coffee*, *spices*, *tobacco*, *cotton* and *rice*.

**St. Pierre and Miquelon**, two rocky islands south of Newfoundland, are unsuited for agriculture, and fishing is the chief industry. St. Pierre is the western terminus of a cable from Europe.

**French Guiana.**—French Guiana, on the north coast of South America, produces *sugar*, *coffee*, *cocoa*, and *spices*, which are exported to France. The town of **Cayenne** is the capital of the Colony. The most important industry is gold-mining.

## CHAPTER III.

### THE GERMAN REPUBLIC.

**Position.**—The German Republic, a country of Western Europe, lies between the Alps on the south, and the Baltic Sea and the German Ocean in the north. Poland lies to the east of it, while France and the Netherlands are to the west. The republic extends for five hundred miles along the Baltic Sea, and for two hundred miles along the North Sea. It occupies a central position in Europe, seven nations, Denmark, Holland, Belgium, France, Switzerland, Czecho-Slovakia, and Poland adjoining its borders.

**Area and Population.**—The area of Germany, about 211,000 square miles, is more than four times that of England, exclusive of Wales, while the **population** amounted in 1910 to 64,925,000.<sup>1</sup>

**Configuration.**—Along the coast the country is generally low and flat, and, in some parts, marshy. Further inland, the land rises, ending towards the south in a mountainous region. The southern part of Germany has mountains covered with dark forests and green pastures, peopled by wood-cutters, chamois-hunters, and herdsmen, while, in its lofty villages, are wood-carvers and toy-makers. This land is full of deep gorges, and bordered by lofty, steep walls of rocks. Through this rugged country the River Rhine flows in a broad, beautiful valley, covered with fruitful fields, orchards, and vineyards. The part of Germany to the north of the mountains is very level, and is covered with corn-fields and pastures; there are also fine fields of flax; and this plain extends in a north-easterly direction to the shores of the Baltic Sea.

Four large rivers traverse Germany in a generally northerly direction from the Alps to the seaboard. The great river *Oder* pours its waters into the Baltic Sea; the *Elbe*, *Weser*, and *Rhine* flow into the North Sea. All these four rivers are navigable, the Rhine and Oder for long distances. The *Danube* has its head-waters in the Black Forest; it is too

<sup>1</sup> Includes Alsace-Lorraine and German Poland.

shallow to be navigable by any except flat-bottomed boats in its course across South Germany. Altogether there are five thousand miles of navigable rivers, to which must be added another nine hundred miles which have been artificially deepened.

•**Canals.**—Compared with the canal system of France or Holland, that of Germany is not very extensive. The Rhine and Danube are connected by *Ludwig's Canal*, 110 miles long, which joins the Regnitz, a tributary of the Main, with the Atmühl, a tributary of the Danube, thus forming a continuous waterway from the German Ocean to the Black Sea. Connections are also made with the Seine by the *Rhine and Marne Canal*, and with the Rhone by the *Rhine and Rhone Canal*, which has Mulhausen and other important manufacturing towns in its course. The Oder and Elbe are connected by the *Friedrich-Wilhelm's Canal*, and the Oder is united to the Vistula by the *Bromberger Canal*.

The great *Kaiser Wilhelm Canal*, across the south of the Jutland peninsula, was opened in the year 1895 to save the voyage round the north of Denmark. It is sixty-one miles in length, stretching from the Bay of Kiel to a point near the mouth of the Elbe. There are huge locks at both ends of the canal, as the mean water-level of the North Sea is somewhat higher than that of the Baltic. The width has now been increased to 213 feet at the surface and seventy-two feet at the bottom; and the depth to twenty-nine and a half feet, to allow for the passage of the largest vessels. The time of passage through the canal is about thirteen hours, and the time saved to steam-ships running between Kiel and Hamburg is twenty-four hours. Russia paid one-third and Germany two-thirds of the cost of this great work.

**Railways.**—Of the thirty-seven thousand miles of railway in Germany, all but a mere fraction are owned by the states or the empire, and no other country of continental Europe has so extensive a system of railways, the lines running in all directions from Frankfort and Berlin. Trains from Paris to Constantinople pass through Strassburg and Munich.

**Climate and Soil.**—The west of Germany, on account of its proximity to the Atlantic Ocean, has an equable climate and a mean annual temperature about that of Britain in the same latitude, while the east is cooler and more extreme.

The ports of the Atlantic are ice-free, while those of the Baltic are frozen for a longer and longer period as we go eastward, the ice not disappearing in the extreme east until the middle of March. The warmest parts of Germany are in the low valleys of the Rhine, Mosel, Neckar and Main, where the full effect of the southern latitude is felt, and it is here that the vine is grown. The higher lands of the south, e.g., in Bavaria, are, on account of their altitude, as cool as the northern lowlands. Half the surface is cultivated, and although the soil of the country is nowhere very fertile, except in the valley of the Rhine, the agricultural areas are cultivated with great skill and large crops are grown.

**Productions.**—The cereals of northern latitudes, *rye*, *oats*, *wheat* and *barley* are raised in all parts of Germany, the first two most extensively; and rye is the bread grain of the poor, as, on account of the sandy soil and cool climate, particularly in the agricultural north-east, wheat cannot be easily grown. *Potatoes* are extensively grown in the eastern part of the empire, where they are used, not only for food, but in the distillation of spirits. Under the stimulating influence of the Government, the *sugar-beet* industry has grown up, chiefly in the north-east; and there are more than three hundred and fifty factories engaged in the manufacture of beet-sugar. More *hops* are grown in Germany than in any other country in the world; while *flax* and *tobacco* are of great value. The culture of the *vine* and the manufacture of *wine* is almost wholly confined to southern and western Germany, where it is especially prosperous in the Rhine valley, from Mannheim to Coblenz, and in the basin of the Mosel, Rudesheim, Johannisburg, Hochheim, and ~~N. Wein~~ are very important wine-making centres in the Rhine valley. As is the case with the other densely populated countries of Europe, most of the agricultural products of Germany are consumed at home and not exported.

*Horses*, *cattle*, *sheep*, and *swine* are raised in vast numbers. Some sheep are sold abroad, although the demand for wool is not covered by home production. So, also, some sausages and hams are exported; but the imports of pork from America are of much greater value than the export of similar articles.

There are few **minerals** that are not found in Germany, the staple products of the mines being *coal*, *lignite*, *copper*, *zinc*,



*lead, silver, and salt.* Of silver, zinc, and copper, Germany yields more than any other European country.

**Forests** cover about a quarter of the whole empire, and the most careful attention is paid to forestry, more especially to the growth of pines and firs. The north-western portion is almost destitute of woods, on account of the sea winds, but the mountainous regions of the south are, in the main, covered with timber. In the south-west is the famous *Black Forest*, from which small rafts of timber are floated down the mountain streams of the Black Forest to the Rhine every year. They are then made up into larger ones. Layers of pine logs are placed one upon another, and over all is laid a rough deck. Upon this are erected cabins enough to accommodate, in some cases, as many as four hundred persons, for the raftsmen usually take their families with them. Live stock is also put on board, and the whole constitute a floating village destined for the Netherlands.

**Manufactures.**—The principal manufactures of the German Empire are textile fabrics, iron and steel goods, sugar, beer, wares of wood, glass, and porcelain. The *textile fabrics* include cottons, woollens, silks, and linens. Of late years manufactures have increased with great rapidity, until Germany now ranks second as an *iron and steel* producing country, coming after the United States, and being considerably ahead of the United Kingdom. The chief seats of the iron manufacture are in West Prussia, where the population is densest, and where coal is largely mined. In particular, the town of *Essen*, in Rhenish Prussia, is famous for the great steel works of Krupp and Co. Here much of the artillery of Europe was made, besides steel rails, and hardware of every description. The other iron and steel-making states are Bavaria and Saxony. Prussia used to produce about half the World's supply of zinc, besides copper and lead. *Alsace-Lorraine*<sup>1</sup> is the most important cotton manufacturing district, while all textiles are produced in Saxony. Although much of the manufacturing is carried on in the smaller towns, large cities are numerous.

**Commerce.**—The greater part of the foreign commerce of Germany is with the adjoining continental countries, the United States, and South America.

In 1919 this again became French territory.

A large share of the ocean commerce of the German Empire is carried on through the ports of the adjacent countries. Antwerp and Rotterdam, in particular, participate extensively in it. The chief ports of Germany itself are *Hamburg* and *Bremen*. One-third of the commerce of Germany is carried on with the adjoining nations. The merchant-marine has been encouraged by the government, with the results that German ships sail every sea, and vessels formerly purchased in foreign countries are now built in domestic ports, especially in *Hamburg*, *Bremen* and *Stettin*. By reason of the thorough technical and commercial education of their traders and agents, the Germans were becoming formidable competitors with the British for the carrying trade of the world. By 1915 they had command of an immense trade in South America, Africa, Eastern Asia, and the Pacific Islands. In addition to this, they had absorbed much of the carrying trade of the Mediterranean ports.

The exports to the United Kingdom reached the value of eighty millions in the year before the War.<sup>1</sup>

	Millions £		Millions £
Textiles .. ..	13	Chemicals .. ..	3½
Machinery, Iron and Steel	11½	Leather .. ..	3
Sugar .. ..	11	Corn and Grain ..	2

The imports from the United Kingdom reached the value of about forty millions, chiefly consisting of—

	Millions £		Millions £
Textiles .. ..	5½	Fish .. ..	2
Coal, Coke, etc. ..	5½	Machinery .. ..	1½
Yarn, etc. .. ..	13	Metals, etc. .. ..	1½

**Cities and Towns.**—There are in Germany twenty-six cities and towns of the first importance.

Berlin, the capital of the Republic, is nearly three times as large as Liverpool. It is situated upon the *River Spree*, a tributary of the Elbe, a broad, sluggish stream, which is here crossed by fifty bridges. Though but a small town two centuries ago, it now ranks third among European cities in *population*, being exceeded by London and Paris only. With the exception of Petrograd, Berlin is the only great capital in Europe that is of modern growth. The development of the

<sup>1</sup> The figures refer to a period before 1914.

city is due partly to its central position upon the plain of Northern Germany, but largely to the fact that it was the seat of the Prussian and Imperial Governments. There is excellent *railway communication* with all parts of Germany and the neighbouring countries, and there is important canal communication with the Oder and the other parts of the Elbe system. The local *industries* are of great variety, the more important being printing and publishing, and the manufacture of steam-engines, locomotives, railway carriages, sewing machines, brass-ware, and chemicals. The *stock exchange* of Berlin is the most important on the continent of Europe.

**Hamburg**, the most important commercial city of continental Europe, is situated on the River Elbe, sixty miles from the sea. Its *population* is about that of Birmingham. *Altona*, a town of one hundred and seventy-two thousand people, joins it on the west, and the two have a river wharf frontage of three miles, besides numerous street canals. From Hamburg a great emigration of Germans, and other Europeans, chiefly to the United States and other parts of America, has been going on for the last fifty years. There is a regular steam-ship communication with the United States, the West Indies, and with both coasts of South America. The principal *imports* are *coal* and *iron*, from the United Kingdom; *coffee*, from Brazil; *crude chemicals*, from Chile and Peru; *grain* and *petroleum*, from the United States. The exports include all those of the German empire. The *manufactures* of Hamburg, although of much less consequence than the commerce, are yet very important. The great items are *metal wares* of every description, *spirits*, *malt liquors*, *chemicals*, *paper*, and *leather goods*.

**Leipzig**, a town of five hundred and ninety thousand people, is, next to Hamburg, the most important commercial city of Germany. Three great fairs are held here every year, attracting merchants not only from all parts of Europe, but even from Asia and Northern Africa. The great staples thus sold are *furs*, *leather*, *wool*, *woollen cloth*, *linen*, and *glass*. Leipzig has a greater trade in books than any other city on the continent of Europe; and, accordingly, type-founding, printing, book-binding, and kindred businesses, are the chief local industries. Musical and scientific instruments, and chemicals, are other important products.

**Breslau**, on the Oder, two hundred miles south-east of Berlin, has a population of five hundred and twelve thousand. The manufactures include *iron* and *steel* products in great variety, *zinc wares*, *woollen goods*, and *paper*. The industrial fairs held here attract visitors from all parts of the empire.

**Munich**, German *München*, with a population of five hundred and ninety-six thousand, occupies a lofty site just to the north of the Bavarian Alps, and upon the banks of the "rapid rolling" Isar. It is one of the most famous art centres in the world, possessing in its museums splendid scientific and antiquarian collections, as well as several libraries. Commercially, the city is celebrated for its artistic handicrafts, especially glass-staining, bronze-founding, wood-carving, and for brewing Bavarian beer. There is a great trade in grain, beer, and art goods.

**Dresden**, a city of 548,000 inhabitants is situated on the Elbe, a few miles from the Austrian frontier. This city contains many objects of interest; and the chief industries are brewing, straw-plaiting, and manufacturing of scientific and musical instruments. The "Dresden" china and porcelain are made at the town of *Meissen*, nine miles distant.

**Cologne**, German *Köln*, a city with a population of about 517,000, is the most important city on the German Rhine. A considerable share of the exports of the empire, *wines* and *timber* in particular, are sent from Cologne down the river to Rotterdam to be carried to their destination by ocean-going steamers. It is also a very important railway centre. Among the many local products are *cotton* and *woollen goods*, *sugar*, *soap*, and *eau-de-Cologne* (French: "Water of Cologne").

**Magdeburg**, on the River Elbe, one hundred miles below Dresden, has a population slightly less than that of Hull. Owing to its central situation and its excellent communications by river and rail, Magdeburg is a very important commercial city, and the chief centre of the beet-sugar trade. The chief local productions are *refined sugar*, *textile fabrics*, and *musical instruments*.

**Frankfort-on-the-Main**, German *Frankfurt*, a city having a population of about four hundred and fifteen thousand, is situated on the Main, which has been canalized from the

city to the Rhine, thus making Frankfort a Rhine port. It is a literary, artistic, scientific, and commercial centre. Ever since the Rothschild family came into prominence here, Frankfort has been one of the chief banking cities of Europe. At the fairs, held every spring and autumn, there is a great trade in leather, books, jewellery, and tapestry.

Hanover, on a tributary of the River Weser, eighty miles south-east of Bremen, is about as large as Bradford (Yorks). Cottons, liquors, and machinery are the principal local productions; and there is a busy trade in leather and wool.

Königsberg, in the extreme north-east of Prussia, is larger than Portsmouth. It controls most of the Baltic trade of Germany, as its harbour is sheltered; in the winter, however, it is closed by ice, and on account of the shallowness of the sea close to the town much of its trade is now done through the out-port of Pillau. The principal items in the trade of this port are grain, petroleum, tea, flax, and fish.

Düsseldorf, a town of 359,000 people, is twenty-five miles from Cologne, down the Rhine. Coal and iron are mined in the neighbourhood, and the iron manufacturing town of Essen is close by. Düsseldorf, however, is widely known for its manufactures of cotton goods.

Altona, see Hamburg.

Nuremberg, German Nürnberg, with a population of 333,000, is known the world over for its toys and fancy articles of metal, ivory, and carved wood, called "Nuremberg wares." Blacklead pencils, gold and silver wire and foil, and powdered bronze are made here.

Stuttgart, a city of much the same size as Hull, is famous for its museums, libraries, and art galleries. It is an important book-publishing centre, and manufactures hosiery, musical instruments, pigments, and chemicals, and has rapidly rising cotton and engine-building industries.

Chemnitz, fifty miles south-west of Dresden, has a population equal to that of Hull. In the manufacture of cotton goods, especially hosiery and calico, Chemnitz ranks first among German towns. Woollen cloth, steam-engines, and spinning machinery are other valuable products of this place.

Elberfeld, a place about the size of Croydon, is famous for its textile manufactures, especially of wool and silk, and for its extensive chemical and dye-works.

**Bremen**, on the River Weser, fifty miles from the sea, is a city containing 247,000 people. In the days of sailing-ships, a numerous merchant fleet hailed from this port, but until recently, when the river was deepened artificially, it was too shallow to admit large modern steam-ships. *Bremerhaven*, thirty miles nearer the sea, has been established as its out-port. The ocean trade of Bremen is principally with the United Kingdom, the East Indies, and the United States. The chief industries of the city are *tobacco manufacturing*, *rice shelling*, and *sugar refining*. It is connected, by railway, with the wharves of Bremerhaven. The harbour of this lower port is seldom obstructed by ice, and has an excellent system of docks.

**Strassburg**, near the Rhine in the Reichsland, a city of 179,000 inhabitants, does a considerable trade in *leather* and *hops*, and has also great *brewing* and *chemical works*.

**Dantzic**,<sup>1</sup> a town having about the same population as Elberfeld, is an important military station, is strongly fortified, and was once a noted port; but the railway has diverted much of its commerce. It exports much of the *wheat* and *wood* of Poland, which comes down the Vistula.

**Stettin**, on the Oder, the Baltic port of Berlin, with a population nearly that of Leicester, has *ship-yards*, *breweries*, *distilleries*, and *potteries*. It is connected with Berlin by canal.

**Barmen**, adjoining Elberfeld, has a population of 169,000; its special manufactures are *ribbons* and *braids*.

**Crefeld**, near Düsseldorf, is a little smaller than Birkenhead. It is the chief seat of the *silk* and *velvet manufactures* of Germany.

**Aix-la-Chapelle**, German *Aachen*, a town a little larger than Sunderland, stands on a coal and iron-field near the meeting place of the Dutch, Belgian, and German boundaries. It is the chief *woollen manufacturing* town of the German Republic.

**Foreign Dependencies**.—Germany has no colonies. Some islands in the Western Pacific, and vast undeveloped areas in Africa, together with *Kiau Chau* in China, acquired in 1897, constitute the foreign possessions of the empire. The *Ladrones* and *Caroline Islands* were purchased from Spain in 1899. The *Samoan Islands* were acquired in 1899 also, by treaty with the United Kingdom and the United States of America.

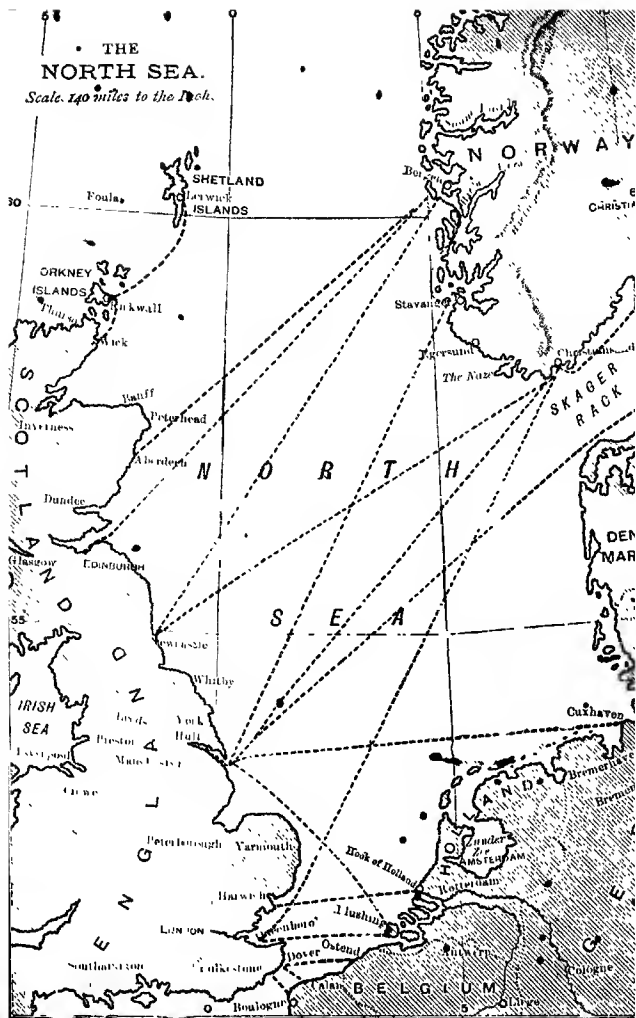
<sup>1</sup> Is in League of Nations territory.

From the *Marshall, Solomon, and Bismarck Islands*, and from *New Guinea*, part of which (*Kaiser Wilhelm's Land*) is a dependency of the empire, Germany obtains cabinet woods, sandal wood, cocoa-nut fibre, copra, and tortoise-shell. The trade has, as yet, no very great value.

The *African possessions* of Germany consist of that part of the Guinea coast which is called *Togoland*; the country north and west of the Congo Free State, known as the *Kameruns*; the region to the north of the Orange River, called *German South-West Africa*, except *Walfisch Bay*, which is British; and the vast area to the east of the Congo Free State, known as *German East Africa*. Along the coasts of these four areas the Germans have trading stations, or "factories," at which they collect *dye-woods, palm-oil, rubber, ivory, cacao, copper, ore* and *sisal hemp*. For these they barter *cottons, spirits, fire-arms, salt, hardware* and *spirits*.

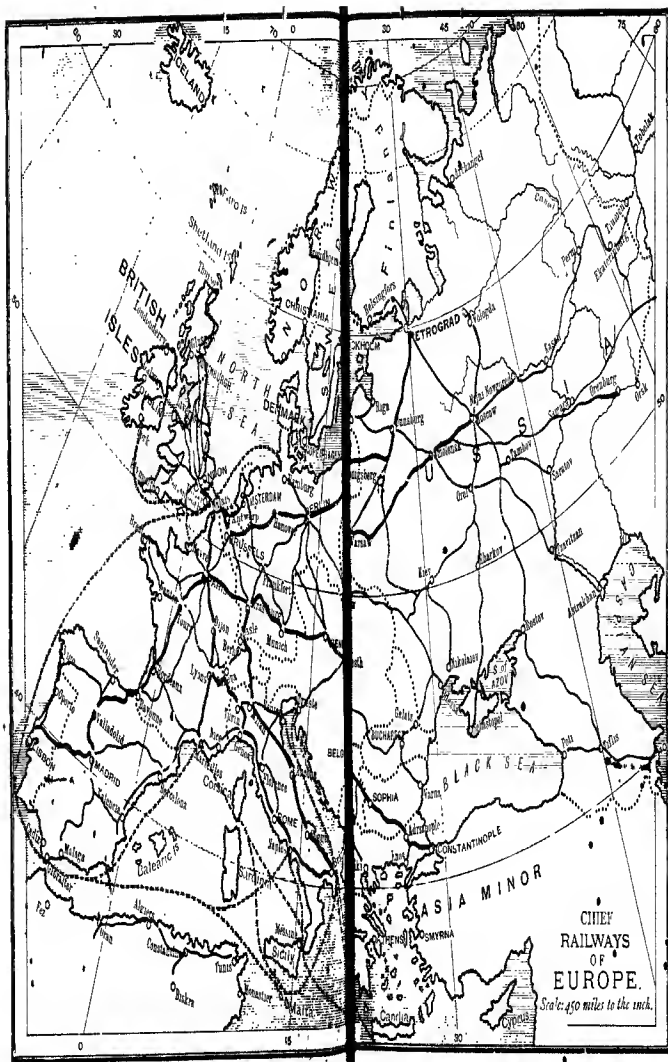
By the Treaty of Peace following upon the European War of 1914-1918, Germany renounced in favour of the Allied and Associated Powers her overseas possession with all rights and titles therein.

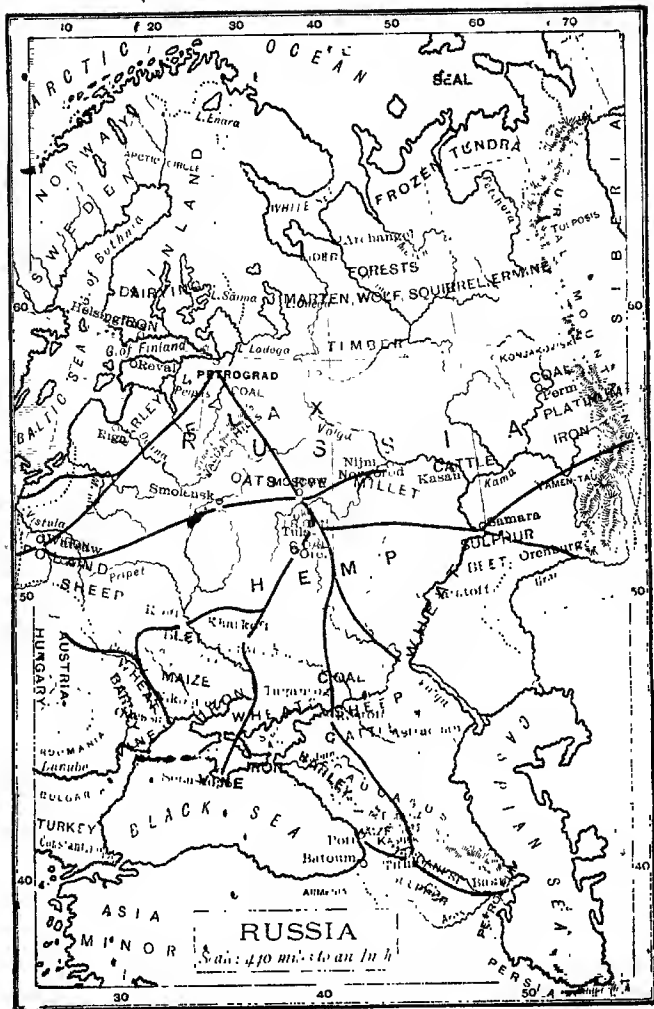
Scale, 140 miles to the Inch.



### ROUTES TO THE CONTINENT.







## CHAPTER IV.

### THE KINGDOM OF HOLLAND, OR THE NETHERLANDS.

**Position.**—Holland is situated to the north of Belgium, having Germany on the east and the North Sea on the west. It is more than one and a half times as large as Wales, and has a *population* of about six and a quarter millions.

**Configuration.**—Most of the country is low-lying and flat ; in the coast districts much of it is below the level of the sea. Here the land is protected from inundation by sandbanks, or *dunes*, formed by the action of the water at the mouths of the Rhine, Meuse, and Scheldt, which flow into the sea through Holland. Where there are no sand-banks, immense *dykes* have been constructed, and these are kept in repair at the public expense.

**Rivers.**—The large rivers which flow through the Netherlands are the *Rhine*, the *Meuse* (Dutch *Maas*), and the *Scheldt*. In their course to the sea these rivers intersect the provinces through which they flow by numerous distributaries and channels, forming considerable portions of these districts into groups of islands.

The *Rhine*, after entering the Netherlands from Germany, divides into two great branches, one of which, flowing south, unites with the Meuse ; the other, flowing west, forms junctions with several small streams, and pours its waters into the North Sea. The *Yssel*, another arm of the Rhine, flows northward into the Zuyder Zee, a large shallow gulf of the North Sea which penetrates sixty miles into the country.

**Canals.**—The system of internal communication in the Netherlands is complete and excellent. It is a land of canals, a network of them covering the whole country. Two thousand miles of these water-ways are navigable for large vessels. Small canals for local communication, as well as for drainage, intersect the country in every direction. One of the most important canals is the *North Sea Canal*, which brings Amsterdam within fifteen miles of the North Sea at *Ymuiden* ; it is twenty-three feet deep.

**Railways.**—The railway system forms connections, on the south, with Belgium ; and, on the east, with Germany.

There are over two thousand miles of railways, more than half of which are owned by the state.

**Climate and Soil.**—The climate is remarkable for frequent and sudden changes from severe cold to extreme heat. In summer the thermometer often rises to ninety degrees, and the winters are sometimes so severe that the rivers are frozen over to such a depth that loaded wagons can cross them on the ice. The soil is generally very fertile. In the *Polders*, as the low-lying lands are called, there is excellent and abundant pasture for cattle. The lighter soils are well suited for the growth of cereals and fruit.

**Productions.**—Heavy crops of *oats*, *rye*, and *potatoes* are raised. Among the other agricultural produce are *wheat*, *pulse*, *flax*, and *sugar-beet*. Seeds, bulbous plants and flowers, are largely grown for exportation. In the district round *Haarlem*, on the north-west coast, tulip and hyacinth growing is a distinct industry.

The raising of *dairy cattle* is a great business, particularly in North Holland; cheese, butter and margarine are important articles of export. Large numbers of cattle are also reared for foreign markets. The value of Dutch oxen and sheep sold in England amounts to a large sum annually. Bee-culture, poultry-raising, and horse-breeding are also profitable occupations.

With the exception of *coal*, which is found in the south-east district of *Limburg*, there are no minerals. The coal-mines are worked by the government. Excellent clays for making tiles, bricks, and pottery abound in many parts.

**Manufactures.**—Although all the raw material of the metals and most of the coal has to be imported, Dutch manufactures are varied and of great value. *Cotton* and *linen* goods are the chief products for export. There are also considerable manufactures of iron, steel, copper, lead, glass, and Delft ware. Gin is a well-known product, taking its name of "Hollands" from that of the country. There are many *beetroot-sugar factories*, *soap factories*, and *breweries*. *Wooden ships* are built in the coast towns, the timber coming from Norway, or in rafts down the Rhine from Germany.

*Blankets*, *friezes*, and other woollen fabrics are made at Leyden and Tilburg; *calicoes* and rich *damasks* in the northern district of Overijssel; *carpets*, *silk stuffs*, and *yarns* in the

neighbourhood of Utrecht ; *fire-arms* and *glass-ware* in South Holland.

Wind is the motive power for driving machinery, as well as for pumping the water off the polders. Windmills are everywhere to be seen ; but steam machinery is coming into more general use.

The fishing industry is very extensive and profitable, employing more than four thousand vessels and fifteen thousand men. The value of the annual product of the *herring fisheries*, chiefly in the North Sea, exceeds sixteen thousand pounds. There are also prolific *oyster* and *mussel beds*, the produce of which is largely exported to England.

**Commerce.**—On account of their command of the Rhine trade of Germany, and of their great colonial possessions, the Dutch are a *nation of merchants* ; and the value of their foreign commerce is greater, in proportion to the population, than that of any other nation of Europe. Most of the exports go to *Great Britain* and *Germany* ; and much of the imports come from these countries. The export trade includes not only the produce of the Netherlands, but also the *sugar, coffee, tea* and *rice* of her colonies.

Holland figures very largely in the trade returns of the United Kingdom, one-fourth of the value of her exports being represented by agricultural produce ; but much of the merchandise exported from Great Britain to Holland is for distribution in Germany and other parts of the continent of Europe.

The imports from the United Kingdom reach the annual value of about twenty millions sterling ; the items of greatest value being :—

	Millions £		Millions £
Cotton Goods and Yarn	3	Machinery	$\frac{1}{2}$
Iron .. ..	$\frac{1}{2}$	Cotton-seed Oil	1
Coal .. ..	$\frac{1}{2}$		

The exports to the United Kingdom, also about twenty millions sterling, consist chiefly of :—

	Millions £		Millions £
Margarine	$7\frac{1}{2}$	Paper	$\frac{1}{2}$
Sugar	$\frac{1}{2}$	Condensed Milk	2
Butter and Cheese	$2\frac{1}{2}$	Eggs	$\frac{1}{2}$
Bacon	1		

**Cities and Towns.**—Being a densely populated country, and having extensive manufactures, the Netherlands have many cities and towns of importance.

**Amsterdam**, situated near the Zuyder Zee, at the confluence of the small river Amstel with an arm of that gulf, is the largest city of Holland, and is connected with the North Sea by the North Sea Canal. The greater part of this city is built on piles, and, like most other Dutch cities, it is intersected by canals, which are crossed by numerous bridges. The characteristic *industry*, which employs ten thousand people, is the cutting and polishing of diamonds, for Amsterdam is one of the principal diamond markets of the world. The other great industries are *sugar refining*, manufactures of *gold, silver, cotton, silk, pigments, and chemicals*. There are also numerous *dockyards, breweries, and distilleries*. Amsterdam is as large as Birmingham, and has a population of 640,993.

**Rotterdam**, the second city in size, and chief *port* of Holland, is situated about twenty miles up the Rotterdam or New Waterway, made by deepening the River Meuse, and owes much of its importance to the transit trade. It has numerous canals, and is protected from the sea by enormous dykes. The industries include *ship-building, gin-distilling, sugar-refining, brewing*, and manufactures of *soap, oil, gold, and silver*. Great quantities of butter and cheese, and large numbers of cattle, sheep, and swine are exported to England. Rotterdam has a population of 462,481. Its out-port is the Hook of Holland.

**The Hague** (Dutch *den Haag*), thirteen miles north-west of Rotterdam, and situated a few miles from the coast, is the *political capital*. The place possesses little commercial consequence, although it has a few foundries, breweries, and gin-distilleries. *Fishing* is the occupation of a large part of the inhabitants, who number 344,000.

**Utrecht**, the most important city in the middle of the country, is a railway and trade centre. Population, 122,853.

**Foreign Possessions.**—The Dutch foreign possessions are in the East and West Indies, the former being the more important. They cover an area of over three-quarters of a million square miles and have a population of forty-seven millions.

The most valuable of the Dutch East Indies are the islands of **Java** and **Madura**. These islands, taken together, have a population of nearly thirty-four millions, all but a small fraction of whom are of native races. There are dense *forests of teak*, but the principal *field-productions* are coffee, sugar, rice, cotton, tobacco, tea, indigo and cinchona. Rice is the largest crop, being the principal food of the dense population; *sugar* and *coffee*, however, are the most valuable exports. The island of Java has long been famous for its coffee, and most of the plantations are owned by agents of the home government; the natives being obliged to work on the coffee plantations for about a month in each year.<sup>1</sup> The export of coffee and other produce is chiefly to the Netherlands.

**Batavia**, a seaport of Java, is the capital of the Dutch East Indies.

**Borneo**, which has valuable coal mines, exports sugar, spices, gutta-percha, and camphor. The greater part of this vast island is claimed by the Dutch.

**Sumatra** has mines of coal, iron, lead, silver, copper, gold, and jewels. In the neighbouring islands of **Banca** and **Billiton** are mines of excellent tin. *Spices*, particularly nutmeg and cloves, are the chief productions of the **Moluccas**, or *Spice Islands*. **Celebes**, the **Riau-Lingga Archipelago**, the **Timor Archipelago**, and the western half of **New Guinea** are also claimed by the Dutch.

The **Dutch West Indies** consist of **Surinam**, or Dutch Guiana, and **Curaçao**.

**Surinam**, a district on the north coast of South America, is half as large again as Scotland, and has about as many inhabitants as Westmorland, mainly negroes. Its principal productions are sugar, cocoa, coffee, and rum. **Paramaribo** is the capital.

**Curaçao** is an island off the coast of Venezuela, which produces cotton, sugar, and a cordial flavoured by a peculiar species of orange.

<sup>1</sup> This system is now practically abolished.

## CHAPTER V.

### THE RUSSIAN FEDERATIVE REPUBLIC.

**Position.**—The Russian Republics comprise the whole of the eastern part of Europe, from the Arctic Ocean in the north, to the Black Sea in the south, and all the northern and central regions of Asia. This vast territory covers about one-seventh of the land surface of the earth.

**Area and Population.**—The area of Russia is nearly seventy times that of the United Kingdom, and the population in 1915 was estimated at 182,000,000.

**Configuration.**—The central region of the country is an extensive plateau six hundred feet above sea level; and from this the land slopes gradually towards the Arctic Ocean, on the north, and towards the Black Sea and the Caspian in the south. The *Volga*, the largest river of Europe, flows into the Caspian Sea; the *Dnieper* into the Black Sea. In the north, the great river *Dwina* pours its waters into the White Sea.

Russia in Asia is partly separated from Russia in Europe by the Ural Mountains. The Siberian plain, which lies to the east of these, is partly covered with a thick, black soil, on which grass and trees grow luxuriantly. Other, and larger portions, are altogether barren, and whole tracts are rarely visited. It includes plains, varying from a few feet to a thousand feet above the sea. Almost the whole of northern Asia from the slopes of the *Thian Shan*, *Altai*, *Sayansk*, and *Yablonoi Mountains* belong to this vast system of plains, across which many mighty rivers, such as the *Obi*, *Yenisei*, and *Lena* run.

**Rivers and Canals.**—The numerous large rivers are generally navigable for part of the year at least. With the canals, which are also numerous, they furnish so extended a system of communication between the chief cities and industrial districts of European Russia that the building of railways has not pressed itself as a necessity upon the government.

The *Bersina Canal* joins the *Dnieper* and *Dwina*, and so unites the Black and Baltic Seas. The *Volga* and *Neva*, the



Dnieper, and Niemen, and the Dnieper and Bug, are also united by canals.

Some of the Finnish lakes are connected with the Gulf of Finland by canal.

**Railways.**—Russia has more than forty-six thousand miles of railways, most of which are owned by the states, thirty-four thousand being in Europe and seven thousand in Asia. The chief lines radiate from Moscow, as a centre, to Petrograd, Vologda, Nijni Novgorod, Tiumen, Saratov, Tsaritsin, Vladikavkas, Odessa, and Warsaw.

The **Trans-Siberian Railway** connects *Petrograd*, on the Baltic, with *Vladivostok*, on the Pacific, and is the longest line of railway in the world.

The **Central Asia, or Trans-Caspian Railway**, runs from *Usan-Ada*, on the Caspian, to *Samarkand*, on the high road to India.

**Climate and Soil.**—Owing to the vast extent of the Russian Republics, it has many varieties of soil and climate. In the northern section, part of which lies within the Arctic Circle, the seas and harbours are blocked with ice through a great part of the year. In the regions bordering on Germany, Austria, and Turkey, and lying between the Black and Baltic Seas, the soil is fertile, producing most of the cereals and vegetables common to other countries of Europe. The south-eastern portion of European Russia is occupied by the arid *Steppes*, or treeless plains.

**Siberia** was declared an independent republic in December, 1917. Recent explorations have proved that the southern part of this territory, especially along the valley of the River Amoor, contains extensive areas suitable for grain growing.

On the whole the Russian Republics have an extreme climate, with cold winters and hot summers. The further east we go the more extreme is the climate, until at Verkhoyansk there is a greater range of temperature than in any other part of the world. The White Sea is closed by ice for seven or eight months in the year and the Baltic for four or five months. The Caspian is also frozen in the north and obstructed by ice further south.

The northern shores of the Black Sea also freeze, especially near the mouths of rivers, and Odessa can only be approached sometimes by the aid of ice breakers.

**Productions.**—A large part of the area of Russia is unfit for cultivation; and, of the arable land, only a small portion is under tillage; nevertheless, agriculture is the occupation of most of the people.

-- In the western provinces, *wheat, rye, barley, and oats* are produced in large quantities. *Rye*, as well as *millet* and *buckwheat*, which are largely grown in the south, furnishes the principal food of the rural inhabitants. In recent years the cultivation of the *potato* has been introduced. *Tobacco*, the *sugar-beet, hemp, and flax*, are important crops. *Cotton* is raised in the Caspian provinces and Turkestan; and, in Trans-Caucasia, *silk* is produced.

Between the *tundras*, or half frozen marsh-lands of the north, and the treeless plains, or *steppes* of the south, the country is for the most part forest-covered. This vast woodland is dotted with thousands of villages, which, with their surrounding farms, occupy about one-tenth of the area. Timber is an important article of inland commerce, being the material used almost everywhere for house building and fuel.

The more important **minerals** of Russia are chiefly found in the region of the Ural Mountains. They include *gold, platinum, copper, and iron*. The iron, which is of excellent quality, is extracted from magnetic ores. **Precious stones**, especially *emeralds* and *diamonds*, are found in the same region. There are **coal-fields** in the Polish provinces, in the districts about Moscow, and in the basin of the Donetz, and in the Ural Mountains near Tiumen.

In Siberia, on the eastern slopes of the Ural Mountains, there are mines of gold, silver, copper, lead, coal, and salt. The Siberian deposits of *graphite* are among the finest, and, before the development of the industry in Ceylon, the largest in the world, and in Trans-Caucasia are great petroleum fields.

*Cattle, horses, and sheep* are raised in great numbers in the southern provinces; and in all the agricultural districts *swine* are abundant.

" The valuable fisheries of Russia are near the mouths of the rivers which flow into the Black Sea, the Sea of Azov, and the Caspian, *sturgeon* being the principal product.

Russia is not a great manufacturing country, the principal factory industries being *spinning and weaving flax and hemp, and tanning leather*. "Russian leather" is a well-known

product of the tanneries. In a few of the principal towns there are manufactures of *silk, woollen, and cotton* fabrics. Metal smelting and metal working are carried on in the Ural provinces. Sheet-iron is the principal finished product, and, in this manufacture, the Russians are unrivalled.

**Commerce.**<sup>1</sup>—The foreign commerce of the Russian Empire was very great. The value of its **imports** amounted to seventy-five millions sterling, and that of its **exports** exceeded ninety-seven millions sterling. Most of the trade was with Germany and the United Kingdom. Russia was one of the principal wheat producing countries of the world, ranking next to the United States.

The chief **exports to the United Kingdom**, amounted to about thirty-four millions sterling, and were<sup>1</sup>.—

	Millions £		Millions £
Timber .. ..	13½	Flax and Tow .. ..	3½
Wheat and other Grain ..	5½	Seeds .. ..	1
Eggs .. ..	4½	Paper .. ..	..
Butter .. ..	3½	Petroleum and other Oil	1½

On the other hand, Russia purchased about eighteen and a quarter million pounds' worth of British goods. The chief articles were:—

	Millions £		Millions £
Machinery .. ..	4	Iron and other Metals ..	1½
Coal and Coke .. ..	4½	Woollens .. ..	1½
Herrings .. ..	2	Chemicals .. ..	½

**Cities and Towns.**—Petrograd, the capital of the empire, is situated on the River Neva, at the head of the Gulf of Finland, an arm of the Baltic Sea. It is connected by railway and canal with all the principal producing districts, and it carried on one-third of the foreign commerce of the empire. Several of the *manufactures* of Petrograd are under the control of the government. In many establishments beautiful *tapestries, mirrors, and wares of crystal and porcelain* are produced. *Cotton and linen* fabrics, and *iron and steel* goods are also made in Petrograd, which contained in 1915, well over two million people. Petrograd is a modern city, having been founded in the year 1703 by the Czar Peter the Great.

<sup>1</sup> The figures given are pre-revolutionary. The trade of Russia at present is practically negligible.

A large part of it is built on islands in the delta of the Neva ; and, for several months of the year, the river is frozen to a depth of five or six feet. On account of the shallowness of the sea in front of Petrograd a ship canal has been dredged along its bottom, guarded by Cronstadt.

Moscow lies in the heart of Russia, and is the railway centre of the country. It sends the produce of the interior to Petrograd for export, and distributes throughout the country the *tea, silk*, and other goods brought from Asia, as well as manufactured goods from Western Europe. Moscow has manufactures of *iron, copper, silver, silk, and wool* ; besides, there are *sugar-refineries, skin-dressing establishments, and chandleries*. It is a great printing and publishing centre, and contains over a million and a quarter inhabitants.

Warsaw, in the province of Poland, has railway and river communication with Germany, and carries on a great export trade in cereals and raw materials. It is nearly as large as Glasgow, and has a population of 909,491.

Odessa, on the Black Sea, is the principal wheat shipping port of Russia ; *wool, hides, and tallow*, from the southern provinces, are also shipped here ; and there are numerous *flour mills*. Odessa is connected by railway with the northern and western parts of Russia in Europe, and has steam communication with the ports of the Mediterranean, with the United Kingdom, and, through the Suez Canal, with India and China. Its *population*, which is very cosmopolitan, is less than that of Liverpool.

Lodz, a Polish city, is important for manufactures of *cotton and woollen goods*. The growth of this place has been remarkable, the *population* having increased five-fold within the last forty years. It has now a population greater than that of Bristol.

Riga, on the Baltic coast of Russia, near the mouth of the southern Dwina River, has manufactures of *soap, glass, iron, cloth, leather, sugar, and tobacco*. It does a considerable amount of ship-building, exporting *flax, hemp, oil seeds, cereals, timber and hides*. Although it is the third largest port of Russia its trade is completely stopped for several months on account of the ice. Riga is larger than Sheffield.

Kiev, on the Dnieper, is a busy city, having large *sugar refineries and leather factories*. It is larger than Dublin.

On account of its position it has always played an important part in the history of Russia.

**Kharkov**, a city with a population less than that of Nottingham, is noted for its great annual fair.

**Tiflis**, on the River Kur in Trans-Caucasia, manufactures *silks, shawls, and carpets*. It has also a very large caravan trade, and is the centre of commerce between Asiatic Turkey, Persia, and Europe. The road over the Dariel Pass to Vladikavkaz is the principal route across the Caucasus. Tiflis contains about twice as many people as Cardiff.

**Kazan**, on the Volga, carries on a great trade with Siberia and Turkestan, through Perm and Ekaterinburg.

**Archangel**, on the White Sea, at the mouth of the Northern Dwina, is a port for the trade of Northern Russia and Siberia. The traffic is chiefly in *furs, fish, tallow, hides, iron, flax, and linseed*. Shipping at this and the other northern ports of Russia, except at *Alexandrovsk*, at the mouth of the Kola river, is only possible during the summer season, for, during the winter, the rivers and harbours are obstructed by ice. It is connected by rail with Moscow and has large saw mills run by an English company.

**Astrakhan**, in the delta of the Volga, exports the products of the Volga and Caspian fisheries, notably sturgeon, its numerous canals being crowded with boats from the Volga and the Caspian. There are also manufactures of *silk, cotton, and leather goods*. The fine quality of fur known as Astrakhan is obtained from a kind of sheep found in Bokhara, a Central Asian province of Russia.

**Tobolsk**, in Western Siberia, near the Ural Mountains, standing on a tributary of the Obi River, does a considerable trade in *grain, salt, timber, and fish*.

**Vladivostok**, the chief Siberian seaport, and a fortified station of the Russian fleet, has some trade in *furs, gold, and dried fish*. It is the Pacific terminus of the Siberian railway. Its fine harbour is seldom closed by ice. Steamers call here twice a week from Tsuruga in Japan, thus bringing it within sixteen days' journey from Vancouver and San Francisco.

**Baku**, on the Caspian, is the centre of the *petroleum* industry, which gives occupation to most of its inhabitants. It is connected by rail with Batum on the Black Sea.

**Tula**, on a coal-field south of Moscow, has large *iron* and

*steel* manufactures. The principal articles are *cutlery*, *rifles*, and *samovars*.

**Nikolayev**, on the estuary of the Bug, is the arsenal and naval base of the Black Sea.

**Tashkent**, in Russian Central Asia, on the Trans-Caspian Railway, is rapidly rising. Its chief industries are *silk-weaving* and *leather-tanning*. Its population is nearly that of Bradford.

**Helsingfors**, the capital of Finland, is in direct steamship communication with England.

**Annual Fairs.**—A peculiar characteristic of the inland trade of Russia is the holding of annual fairs, at which merchants from all parts of the country meet and carry on exchanges of the wares of Western Europe and of Asia, as well as the products of different parts of the country. The largest of these fairs is held at Nijni Novgorod, that is, Lower Novgorod, a town near the junction of the Oka with the Volga. This place is on a great trade route, where the metal and other wares of the north meet the produce of the fields of the south, the fish of the Caspian, the tea, cotton, and silk from Persia and the far east. The introduction of steam navigation on the Volga, on which, not far from Nijni Novgorod the annual fair is held, has greatly increased its importance. The settled population of the town is about 112,000; but at the time of the fair, the number is five times as great. Manufactured goods constitute a great portion of the trade; and the prices of many of the products of the country, especially of cotton, wool, silk, and iron goods, are regulated by this fair. The total value of the exchanges effected here is estimated at £40,000,000 sterling. Other fairs are yearly held at **Poltava** and **Kharkov**, towns between the Dnieper and the Donetz.

## CHAPTER VI.

### THE KINGDOM OF BELGIUM.

**Position.**—Belgium, although the smallest country in Europe, except Montenegro, ranks fifth among the countries of Europe in respect to its trade with the United Kingdom. It lies between France and Holland, having Germany on the east of it. The coast-line of about forty miles on the west is washed by the North Sea.

**Area and Population.**—Belgium is one of the most densely populated countries in the world. Although its *area* is less than 11,400 square miles, the *population* is over seven and a half millions, or 665 inhabitants to the square mile.

**Configuration.**—The general formation of the country is a gradual slope, from the *Ardennes* highlands on the south-east, to the low-lying districts of the sea-coast and the Netherlands border. A considerable part of the southern coast district of West Flanders is below the level of the sea, and the water is kept out by dykes. In many places also there are dykes along the banks of the rivers to protect the adjacent lands from being flooded. The principal rivers are the *Scheldt* and the *Meuse*, both of which take their rise in France, and traversing Belgium, flow through the Netherlands, into the North Sea. From these navigable rivers the canal system of the country is abundantly supplied.

**Canals and Railways.**—The system of *railways* and *canals* is excellent. The mining and manufacturing towns are connected by rail, navigable river, or canal; and some of the canals are the best in Europe. That which connects Brussels with the coal-mining districts crosses several others, forming a water-way, not only to the principal towns of Belgium, but also to the Netherlands and France. Belgium has about 5,400 miles of *railway*, most of which are owned and worked by the state.

**Climate and Soil.**—In the low-lying districts by the sea-coast the climate is *moist* and *cool*. On the higher slopes the winters are very cold and the summers hot. Much rain

falls in April and November. The soil is *fertile*, more than one-half of the country being under culture, and one-sixth covered by forests.

**Productions.**—Belgium is a land of *small farms* and spade culture, the farming being the best and most productive in the world. *Wheat*, *rye*, and *oats* are the principal cereals, while *flax* is extensively grown and the *sugar-beet* is raised in considerable quantities. *Potatoes* are grown in all the provinces. *Tobacco*, *hops*, *chicory*, and *madder* are other field crops.

*Horses*, *cattle*, and *sheep* are the principal domestic animals, and large numbers of these are raised for export as well as for home use. The Belgian government gives much encouragement to *stock-breeding* and the improvement of agriculture.

Belgium has great wealth in *minerals*, particularly in *iron* in Namur, Liège, and Luxemburg, and *coal* of the best quality in the valleys of the Haine, Sambre and Meuse; and these resources are developed to the greatest possible extent. The principal mining districts are in the southern parts of the country. *Zinc* (in Liège), *lead*, *copper*, and *black marble* are also found.

**Industries.**—The manufactures of Belgium are varied and extensive. Nearly half a million people are employed in the culture, preparation, and manufacture of fabrics made of flax, for Belgium is famous for *linen goods* of the finest quality, Brussels and Mechlin being the chief centres of this manufacture. *Lawn* and *damasks* are noted products of Bruges, and *Ypres* is one of the great centres of the *woollen manufacture*. Brussels has a world-wide reputation for its *lace*. The principal centres of the *cotton manufacture* are Ghent, Bruges, Mechlin, and Antwerp. *Metal working* is mainly carried on in the great mining districts of the south-east. At Liège, *fire-arms*, *machinery*, *zinc-ware*, and *tin-ware* are made; at Namur there are *brass* and *wire works*, and at Charleroi, great *nail factories*. Among the other industries of Belgium are *sugar-refining* and *paper-making*, as well as manufactures of *porcelain* and *glass*. Belgium has considerable coast and deep sea fisheries, principally of *herring* and *cod*. The *oyster beds* are also important.

**Commerce.**—During the war of 1914-18, the foreign commerce of Belgium suffered much through the occupation



of the Germans who commandeered most of the industrial resources and carried on such manufactures as suited the particular needs of their army. The manufacture of certain fabrics ceased altogether, for flax could not be grown on the waste land. Other industries could not be continued because of the destruction of factories and plant. In the five years, Belgian export trade declined in value from £16,000,000 to £200,000, and her import trade suffered equally.

Many of the Belgians driven from their homes in 1914 hurried back after the German retreat and worked hard to revive the industrial prosperity of their country. Also, by the Peace Treaty of 1919, Germany undertook to do her best to repair the damage in the invaded areas, so that, as time goes on and the towns are restored or rebuilt, Belgium will almost certainly regain her high position in the commercial world.

**Cities and Towns.**—Brussels, an industrial city as well as the political capital of Belgium, is connected by canals with the other principal cities, and by railways with France, Germany, and the Netherlands. The city is famous for manufactures of lace and carpets. Among the other industries of this busy city are manufactures of damask, ribbons, porcelain, and jewellery.

Antwerp, situated on the estuary of the Scheldt, is not only the principal seaport of Belgium, but also the transit port for much of the sea-borne commerce of northern Germany, and has a considerable ship-building trade. Among its varied factory products are cotton and linen goods; black silks and sewing silk; gold and silver lace; and carpets.

Liège, on the Meuse, one of the chief industrial cities of Belgium, is in the heart of the great coal, iron, lead, and zinc mining district, and a great variety of metal wares are made in this city. Liège has a wide reputation for the manufacture of fire-arms, employing thirty thousand men in this industry. It also manufactures steam-engines, saws, files, nails, needles, and clocks; besides cotton and woollen goods. It is the chief cattle market of Belgium.

Ghent, a centre of the cotton and leather manufactures, has also sugar refineries, flax-spinning mills, and woollen manufactures. Although an inland city, it does a considerable amount of ship-building, being connected with the sea at

Terneuzen on the mouth of the Scheldt by a great canal. The docks are capable of accommodating several hundred vessels, and the city has an increasing population.

**Foreign Dependencies.**—Belgium has no navy, and only one colony, the Congo Free State, an immense, but thinly-peopled tract of country in Central Africa, which exports a few tropical products, such as *rubber*, *ivory*, *palm-nuts* and *palm-oil*. Most of the trade, through Boma and Banana, is with Belgium. Navigation up the Congo is interrupted one hundred miles from its mouth by falls. To avoid these a railway two hundred and fifty miles long has been built, connecting Matadi with Leopoldville. There are, in all, about 700 miles of railway in the colony. The capital is Boma.

## CHAPTER VII.

### THE KINGDOM OF SPAIN.

**Position and Size.**—Spain and Portugal form the large peninsula, called the Iberian Peninsula, in which the continent of Europe terminates at the south-west. Spain itself lies between the Mediterranean Sea, on the east, and Portugal on the west. It is separated from France by the mountain range of the Pyrenees, and the Bay of Biscay completes the northern boundary. The area of Spain is nearly four times that of England, excluding Wales, but its population, twenty millions, is considerably less than half that of the United Kingdom.

**Climate, Soil, and Productions.**—There are seven mountain ranges or ridges extending generally in an easterly and westerly direction. The northern districts, exposed to cold winds from the snow-crowned Pyrenees, have long winters as well as much rain in spring and autumn. In the valleys of the southern sierras and the plains of the Mediterranean and Atlantic coasts, spring and autumn are delightful seasons, the winter is mild, and the summer tropical. In the interior districts, which form an elevated plateau, covering half the area of the kingdom, there are extremes of heat and cold.

The soil, where the rainfall is sufficient and irrigation is possible, is capable of cultivation, and is generally fertile, although in the *huertas*, or fruit-gardens of the east, rocks have to be broken up by hand to form soil. In the north, *wheat*, *barley*, and *rye* are plentifully produced, and *timber* is abundant. The *cork-oak* is cultivated in the Mediterranean coast country. *Grain* and *wine* are the chief products of the central region. In the south the vegetable products include *cotton*, *rice*, and *sugar*; *oranges*, *lemons*, *dates*, and a great variety of other fruits. *Flax*, *hemp*, and the *mulberry-tree* are cultivated in many districts. The great majority of the people are engaged in agriculture, and *vine culture* is the leading field industry.

**Domestic Animals.**—The beasts of draught and burden are mostly *mules* and *donkeys*. Horses are not much used in Spain. *Sheep-rearing* has for centuries received much attention.

and *wool* is an important article of export. *Cattle, swine, and goats* are also raised in large numbers.

**Minerals.**—There are deposits of *iron, lead, copper, quicksilver* and *tin*. The principal iron mines are in the north. Large quantities of iron ore of fine quality are exported from Bilbao and San Sebastian, on the northern coast. Almaden, in the south-central part, has the richest quicksilver mines in the world, except those at New Almaden in California.

**Manufactures.**—In manufactures the country is backward. Most of the output of the mines is exported as raw material. There are *cotton* and *silk* factories at Barcelona. *Woollen* and *linen* goods are also manufactured, but there is no export trade in these products. The cutting and preparation of *cork* form an important industry in the province of Gerona, on the Mediterranean coast. Toledo, famous for centuries for its *sword-blades*, has still some manufactures of steel. Vine-culture being, as we have seen, the leading agricultural pursuit, so *wine-making* is the chief manufacturing industry, and wine takes the lead among exports of the kingdom.

**Means of Communication.**—There are 8,960 miles of *railway*, all worked by private companies, but largely supported by Government guarantees. Owing to the mountainous nature of the country there are but few *canals*, and except in their lower courses the rivers are navigable only for flat-bottomed boats. In the interior the carriage of merchandise is mostly by draught animals. The principal rivers take the direction of the mountain chains, which cross the country from east to west. The *Ebro*, rising in the Cantabrian range, flows south-east into the Mediterranean. The rivers flowing west and south-west—the *Đuro*, *Tagus*, *Guadiana*, and *Guadalquivir*—discharge their waters into the Atlantic, the Douro and the Tagus traversing Portugal.<sup>1</sup>

**Commerce.**—The countries doing most trade with Spain are the United Kingdom and United States. The principal exports to the United Kingdom are :—

	Millions £		Millions £
Iron and other Ores ..	12	Wine ..	2-3
Oranges ..	2½	Esparto, etc. ..	½
Other Fruits ..	1½	Cork ..	1½
Onions ..	1		

<sup>1</sup> The *Duro* and *Tajo* in Spain become the *Douro* and *Tejo* in Portugal.

The chief imports from the United Kingdom are :—

	Millions £		Million £
Coal .. .. .	1½	Machinery .. ..	1
Iron goods and new ships	1	Textiles .. ..	½

**Chief Cities and Towns.**—Madrid, the capital, is a city of over half a million inhabitants, and the only town of any size on the plateau. Commercially, it is of little importance, and it has hardly any manufacturing industries. On account of its position, however, it is in railway communication with the rest of the country and consequently is rapidly increasing in size and importance.

**Barcelona**, on the Mediterranean coast, is the principal seaport. It is the second city in population, having 560,000 inhabitants. It manufactures and, to a small extent, exports *silk, woollen, and cotton goods, and fire-arms.*

**Valencia**, on the Mediterranean coast, is an important seaport rather larger than Portsmouth. It has manufactures of *silk, wool, glass, and tobacco*, besides *floor-tiles and hemp goods.*

**Malaga**, on the south coast, is situated in a district famed for the production of *raisins*, and the sweet wine known as Muscatel. A large share of the raisins exported comes to the United Kingdom. The city contains about 133,000 inhabitants.

**Cadiz**, in the southern part, on the Atlantic coast, has a considerable export trade in *wines, fruits, and olive-oil.* There are *glass-works and soap-factories* at this place. Cadiz is about the size of Ipswich.

**Seville**, one of the most beautiful cities of Spain, contains 155,000 people. It is situated ninety miles inland, on the Guadalquivir, in the middle of the Plain of Andalusia, and is in direct communication with London. *Iron wares, fire-arms, and porcelain* are made here.

**Colonies.**—In the year 1898 a war broke out between the United States and Spain, because the latter country failed to maintain order in Cuba. From first to last the superiority of the States was apparent. The United States captured nearly all the Spanish colonies, *Cuba and Puerto Rico* in the West Indies; and the *Philippine Islands* in the East Indies. Since that time the Spaniards have sold the Caroline Islands

to Germany ; so that of the once great colonial empire Spain retains only the *Rio de Oro Protectorate* in the Western Sahara ; the *Canary Islands* off the north-west coast of Africa, which are noted for the production of *cochineal* ; and the *Presidios* of *Melilla* and *Ceuta* in Morocco. By a decree of 1918 *Melilla* was created a municipality.

## CHAPTER VIII.

### THE KINGDOM OF DENMARK.

**Position and Area.**—Jutland, which, with a group of islands in the Baltic Sea, forms the Kingdom of Denmark, is a peninsula extending northward from the German province of Schleswig-Holstein. The narrow and shallow Lim Fiord isolates the northern portion of the peninsula. The area of Denmark is about twice that of Wales, and its population, including the Farøe Islands, is less than that of the West Riding of Yorkshire.

**Climate and Industries.**—The climate is much like that of Scotland. There is seldom extreme cold, except in January and February. No part of Denmark is more than forty miles from the sea or more than 600 feet above the sea-level.

About half the people live by agriculture. In the cultivated districts the soil is well adapted for the *cereals* and other crops of northern Europe. *Oats* are the most important cereal, after which come *barley* and *rye* and at some distance *wheat*. *Potatoes* are largely grown and the *sugar-beet* is being raised in increasing quantities.

About five per cent. of the area is covered with *forests*, principally of *beech*, which thrives better in Denmark than in any other European country. There are large areas of swamp and moor, which supply *peat* for fuel.

*Cattle-grazing* is a very important industry; and *dairy products* and *live stock* are the principal exports. Large numbers of *cattle*, *sheep*, *swine*, and *horses* are raised. *Danish butter* is a staple commodity in Great Britain.

Considering that Denmark has, in proportion to its size, a very extensive sea-coast, it cannot be said that its *fisheries* are important. The products are chiefly *herring*, *cod*, and *mackerel*, a little being exported.

There are some small deposits of *coal*, but no mines of metal. In the island of Bornholm there are *clays* valuable for the making of porcelain. On the shores of Jutland *amber* is often washed up by the sea.

The manufactures are not important. The principal products are *butter, brandy, earthenware* and *terra-cotta*. Around Copenhagen there are a few iron-foundries, machinery factories and sugar-refineries. Most of the raw material for iron manufactures is imported from England.

In the rural districts the people make at home a great part of the clothing they require for their own use. The Danish women are skilled in *spinning* and *weaving* cotton and wool. The men make the household furniture and most of the farm implements, as well as the wooden shoes which are generally worn by young and old.

**Means of Communication.**—There are 2,100 miles of railway in Denmark, mostly owned by the State. There are several **canals** in the peninsula and in the islands, but no rivers of any importance as the country has not the size or build for their development. The roads are excellent. Numerous inlets of the sea penetrate far into the coast districts on the east. These, with the railways and canals, supply a good system of internal communication.

**Commerce.**—The greater part of the foreign commerce of Denmark is with Great Britain, Germany, the United States, and Sweden. More than five-sixths of the total exports are *butter, eggs, pork, live stock, and cereals*. The imports are chiefly *textiles; ores, hardware and coal; coffee, tea, sugar, wines, and tobacco*.

Denmark imports from the United Kingdom goods to the value of about £7,779,000 annually, the chief items being *manufactured goods and colonial produce*. Denmark and her colonies export to the United Kingdom £22,750,000 worth of goods. The United Kingdom takes from Denmark *butter, bacon, hams, live animals, barley, and eggs*; sending to Denmark *coals, textiles, and metal goods*.

**Cities and Towns.**—Copenhagen, the capital, is in Zealand. It is the chief seaport, and the commercial and industrial centre of the kingdom. The royal *porcelain works* have a European reputation. There are also manufactures of *glass-ware and gloves*. The city has a population of 510,000.

Esbjerg, the chief port of the North Sea, has an increasing trade with England.

**Foreign Dependencies.**—The only foreign dependency of Denmark is *Greenland*. The West India Islands of



*Santa Cruz*, *St. Thomas*, and *St. John* originally belonged to Denmark; but they were sold to the United States in 1916. The United States took possession of them in 1917.

*Iceland* is an island of the North Atlantic, 850 miles west of Norway. Its size is about four-fifths that of England; but its total population is less than 90,000. It is a country of lofty mountains and vast ice-fields, and is habitable only in a few of the coast districts. There is no agriculture except the growing of *hay* and *garden vegetables*. *Sheep*, *horses*, and *oxen* are the principal wealth of the people. One of the natural products of the island is *Iceland moss*, used as an article of food, and for medicinal purposes. The only mineral worked is *sulphur*, which is abundant in the vicinity of *Mount Hecla* and some other volcanoes. The *fisheries* are busily followed. The *exports* from Iceland are *living animals*, and *animal food*, *Iceland moss*, *eider-down* and *oils*.

Since December, 1918, it has been acknowledged as a sovereign state, and is united to Denmark only by a personal bond of union, under the government of King Christian.

*Greenland* is an almost unexplored region of North America. The few villages on the coast export *cryolite* (used in making soap-soda), *alum*, *skins*, and *whale-oil*. The trade with Greenland is a State monopoly.

*Santa Cruz*, *St. Thomas*, and *St. John* are *sugar plantations*, which export raw sugar to the United States, Great Britain, and Denmark.

## CHAPTER IX.

### THE KINGDOMS OF SWEDEN AND NORWAY.

#### NORWAY.

**Position and Area.**—Norway forms the western part of the Scandinavian peninsula, the eastern part being Sweden. The two countries were united under the same King in 1814, but the Union was dissolved in 1905, and a new and separate government set up in Norway.

**Configuration and Climate.**—Over a large part of its area Norway is mountainous and rocky. A great mountain chain forms a natural boundary between it and Sweden. Owing to the influence of the prevailing south-westerly winds the climate is generally milder and more equable than that of countries in the same latitude. Its harbours are never frozen even in the north, while those of Sweden, even in the south, are ice-bound during part of the winter. *Oats, rye, hemp,* and *flax* are grown as far north as 66°, and *barley* within the Arctic Circle.

**Industries.**—Norway provides much of the timber of European commerce. *Cattle-raising* is also an important industry.

The fisheries are very valuable, particularly *cod* and *herring*.

There are deposits of *copper, nickel,* and *silver*. *Ship-building* is largely carried on; and, in proportion to its population, Norway has a larger shipping tonnage than any other country. Though the country lacks coal it possesses an enormous amount of water power. The chief manufacturing use of this power has been for the production of electrochemical products, such as ammonium nitrate, which is becoming a more and more important Norwegian industry.

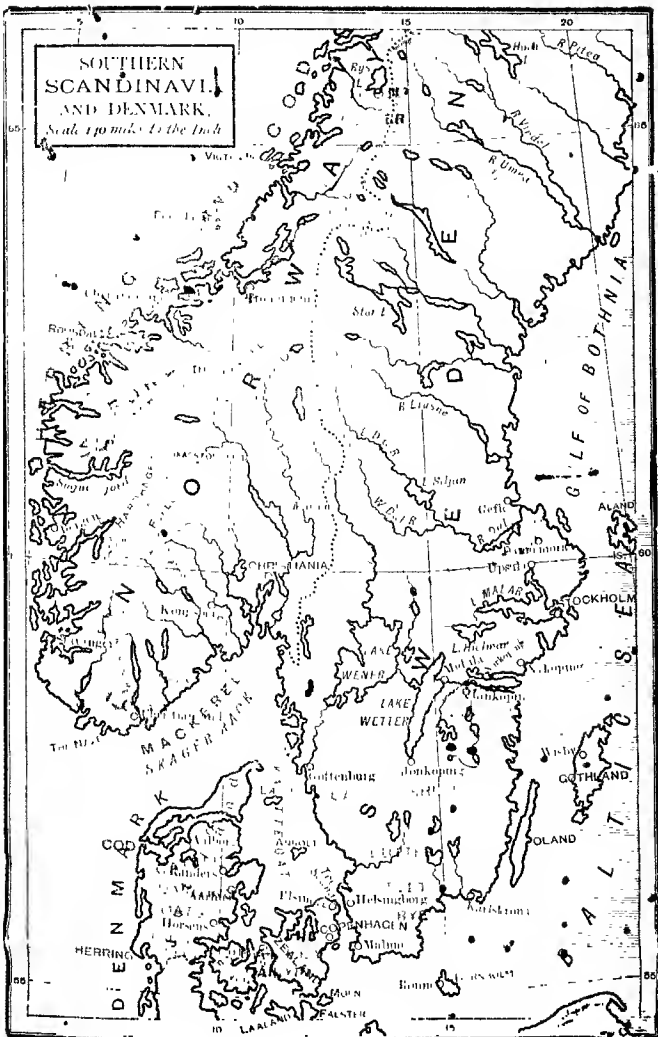
**Means of Communication.**—There are nearly 2,000 miles of railway open, of which 290 miles are private lines, the rest being owned by the State. The length of *telegraphs* and *telephones* belonging to the State is over 68,000 miles.

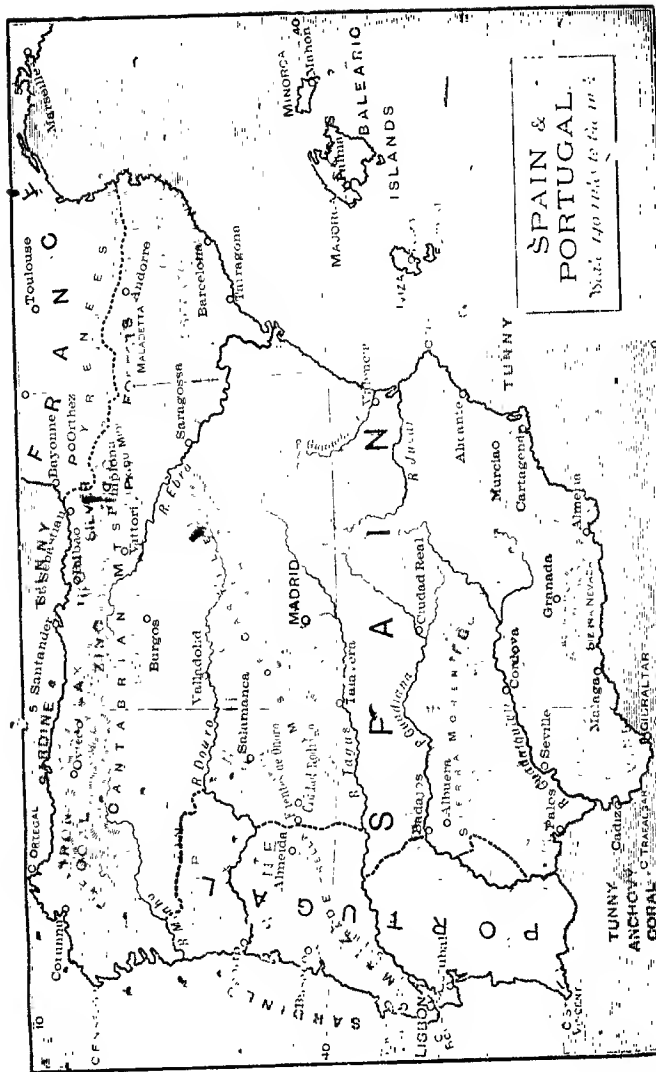
The rivers are generally short and rapid, and are only navigable for a few miles from the coast. They are of great





## Scale 100 miles to the inch





importance for floating down rafts of timber from the mountainous forests to the fiords, and recently for the supply of power, which makes up for the lack of coal.

**Commerce.**—The foreign commerce is mostly with Great Britain, Germany, Sweden, Denmark and Holland. Animal produce, timber and minerals and metal goods are the chief exports, whose value is about forty millions annually. The imports amount to about eighty million pounds.

**Cities and Towns.**—The capital of Norway is Christiania; it is the principal seaport, and ships great quantities of timber. Its population is about 256,000.

Bergen, the second city of the kingdom, with a population of 91,000, is a great fishing centre.

#### SWEDEN.

**Position and Area.**—Sweden occupies the eastern part of the Scandinavian peninsula, and is bounded on the east by the Baltic Sea and Russia. Its area is 172,876 square miles, and the population about six millions.

**Configuration and Climate.**—For the most part the country is flat, with pleasant undulations, rising in the north-west to the Kölen mountains, which separate Sweden from Norway. The climate in the south favours the cultivation of cereals—oats, rye, barley, and wheat; potatoes are also grown.

**Industries.**—A large part of Sweden is covered with forests, which supply timber for domestic purposes and for export. Mining is one of the chief industries, and Swedish iron, smelted with charcoal, has long been esteemed for its excellence. The richest mines now worked are at Gellivara.

**Means of Communication.**—There are over 9,400 miles of railway open, one-third being the property of the State. The telegraphic communication is extremely good, and there are over 400,000 miles of telephone wires in use.

The rivers are generally short and rapid, and are only navigable for a few miles from the coast. They are, however, of great importance in some parts for the transport of timber. There are several very good canals in south Sweden, notably the Gotha Canal, joining Göteborg with the Baltic, *via* the great lakes.

The lakes of Sweden cover about one-twelfth of its total area, and some of them are of considerable commercial

importance. The largest, *Lake Wener*, is third among the lakes of Europe in size.

**Commerce.**—The foreign commerce is mostly with Great Britain, Germany, the United States and Denmark. The principal exports are *timber*, *metals*, and *live animals*. The imports consist mainly of *breadstuffs*, *raw* and *manufactured textiles*, and *coal*. The total imports are of the average annual value of forty-six millions sterling, while the exports are valued at forty-five millions.

**Cities and Towns.**—Stockholm, the capital of Sweden, near the Baltic coast, has a population of about 413,000. It is the commercial as well as the political centre of Sweden. It has a large trade in the export of *iron* and *timber*, and has manufactures of *cotton*, *wool*, *silk*, and *leather*.

Göteborg (Swedish, Göteborg), on the Gotha river and canal, is the second city of Sweden. It is the principal seaport, and has manufactures of *cotton* and *woollen goods*, *sailcloth*, and *tobacco*. Population, 197,000.

Norrköping, with a population of 58,000, is the chief industrial town of Sweden.

Gefle is one of a number of towns exporting wood.



## CHAPTER X.

### THE KINGDOM OF ITALY.

**Configuration, Soil, and Climate.**—Italy is a peninsula extending into the Mediterranean Sea from the south of Europe. The lofty chain of the *Alps* separates it from Switzerland and Austria; its eastern shores are washed by the Adriatic Sea.

The area of Italy, including the large islands of Sicily and Sardinia, is a little less than that of the United Kingdom, but its population is eleven millions less. The *Apennines* and other mountains almost fill the peninsular area. The great lowland region is the Plain of Lombardy in the north, enclosed on three sides by the Alps and Apennines and drained by the River Po.

Throughout the greater part of the country the soil is productive and the climate highly favourable to agriculture, which is the occupation of the majority of the people. The climate is generally warm and dry, most of the rain falling during the winter months. In the Alpine provinces of the north the winters are severe. An almost tropical heat is a feature of the climate in the extreme south.

**Industries.**—The principal agricultural products are *wheat*, *maize*, and *rice*; *hemp*, *flax*, and *cotton*; and numerous kinds of *fruits*, including *olives*, *oranges*, *lemons* (from Palermo), *figs*, *dates*, and *melons*. In wine-growing, Italy ranks second to France alone, while its production of *raw silk* largely exceeds that of France. The island of Sicily has been called "one great *wheat* farm." In Lombardy the *mulberry-tree* is cultivated. The cultivation of the sugar beet is receiving more attention. From 1916-1918 the crop increased from one to twenty-three million cwt.

The domestic animals are chiefly *cattle*, *sheep*, *goats*, and *swine*. Large numbers of *sheep* are raised in the mountain districts. The export of wool is, however, not very great.

The fisheries of Italy are extensive. The Mediterranean affords supplies of *tunny*, *anchovies*, *sardines*, *pilchards*, and *mackerel*. *Oysters* and *coral* are other products of the Italian seas.

**Minerals and Manufactures.**—In Sardinia, there are rich mines of *lead, iron, zinc, and copper*. *Iron, tin, and lead* are found in Elba. Sicily has extensive mines of *sulphur* in the vicinity of Mount Etna, and this is an important article of export. Italy is famous for the beautiful white *marble* of Carrara.

The development of **manufactures** has been retarded by the want of *coal*, of which hardly any is found in Italy. In recent years, however, the production of *iron goods* has been increasing. The making of *olive-oil* is an important and widespread industry. The manufacture of *wine* is also very considerable. There are *silk factories* in the northern provinces, and domestic manufactures of coarse *cottons* and *woollens* in nearly all parts of the country. Artistic work in *marble* and *mosaics* is a characteristic industry of Italy.

**Means of Communication.**—There are more than 11,722 miles of railway. Connection has been formed with the French and Swiss railway systems by three great tunnels through the Alps—*Mont Cenis, St. Gothard, Simplon* and *Lötschberg*. Most of the *canals* are in the northern provinces of Piedmont, Lombardy, and Venice. Many of them are navigable for large vessels. The *rivers* are for the most part navigable only for small boats and barges, but they supply motive power for manufactures. The largest river is the Po, which rises in the Alps.

**Commerce.**—The foreign commerce of Italy is chiefly with France, the United Kingdom, United States and Argentina. The most valuable **exports** are *raw silk, silk and cotton manufactures, fruit, olive-oil, wine and eggs*; and the main **imports** are *raw cotton and silk, coal and coke, metal goods and machinery, grain and timber*.

**Commercial Cities and Towns.**—Rome, the capital, is situated near the Mediterranean coast, twelve miles from the mouth of the Tiber. Commercially this city, so famous in ancient times, is of little note. With its suburbs it is nearly as large as Manchester.

Naples (Italian *Napoli*), situated on the beautiful bay of the same name, is the largest city of Italy and owes its importance to the extraordinarily fertile soil of the surrounding country. It has considerable manufactures, chiefly of *silk*, and exports *dried fruits, wines, argol* (crude tartrate of potash), *olive oil*, and *coral*. It is almost as large as Liverpool.

**Genoa**, on the north-west coast, has an excellent harbour, and is the chief banking centre and port of northern Italy. The main exports are *olive-oil, rice, fruits, and silks*. A pass through the Apennines makes it the port of the upper Po Valley, and through the Alpine tunnels it is a port of southern Germany. Population, 289,154.

**Milan** is the principal centre of *silk* manufacture. It is the second city of Italy in population, having 599,200 people.

**Venice**, an important and famous *seaport* on the Adriatic, is built on a cluster of small islands. Its streets are canals, and its vehicles are boats. It has manufactures of *mirrors, gold and silver ware, silks, velvets, and laces*. Some *ship-building* and *sugar-refining* are done at this port. Venice contains 160,719 inhabitants.

**Italian Colonies.**—The total area of these is over a million square miles, with a population of more than a million and a half. They consist of Erythrea, Somaliland, Tientsin Concession, Tripoli, and Cyrenaica. The two latter territories were obtained by conquest and cession from the Ottoman Empire under the Treaty of Ouchy (October, 1912). The ancient ruins in Cyrenaica are supremely interesting. The principal articles exported from Tripoli are *ostrich feathers, ivory, skins, sponges, hides, esparto grass, cattle, and horses*. The capital is Tripoli, whose population is 73,000.

## CHAPTER XI.

### THE REPUBLIC OF SWITZERLAND.

**Configuration.**—Switzerland is an inland country. It has Italy on the south, Germany on the north, Austria on the east, and France on the west.

The area of Switzerland is about twice that of Wales, and the population is over three and three-quarters millions.

Switzerland is a country of mountains and lakes, and the character of its soil and climate is as varied as is the elevation of its several districts above the sea-level. The mountain peaks are capped with perpetual snow. Below the snow level, distinct zones of vegetation are distinguished, from the ~~simble~~ and sparse grass of the upper alpine region to the wheat and vines of the lowest valleys. In the intervening belts, pasture land and forest cover a large area. Over one-third the surface of the country is *pasture land* and *meadow*; one-third is covered by barren *rocks*, *glaciers*, and *water*; one-sixth is *forest*; and about one-tenth is under *cultivation*.

The principal **agricultural products** are *wheat*, *rye*, *oats*, and *potatoes*. In several districts the *mulberry-tree* and the *vine* are cultivated. *Apple orchards* are numerous. Switzerland has few useful minerals.

Nearly all the raw material used in the manufacturing industries is imported. The country has abundant *water power*, which partly compensates for the lack of coal, but a large part of Swiss wares are hand-made.

**Cattle-raising** is the occupation of a large number of the people. In summer the cows are driven to the mountain pastures, where they are tended by herdsmen, who live during the season in wooden huts (*chalets*). Here the *butter* and *cheese*, of which Switzerland exports large quantities, are made. *Sheep* and *goats* are also raised in great numbers. The *chamois* is the wild goat, or antelope, of the Alps. From the skin of this animal the soft leather so-called was first prepared. The market supply of this leather is now made from sheep-skins.

The best known Swiss manufactures are *clocks* and *watches*,

for which Geneva, in particular, is famous. *Chronometers, musical-boxes, and mathematical instruments* are also made. *Silk, linen, and cotton fabrics*, especially *machine-made embroideries*, are manufactured in several cantons. The other industries of Switzerland include *wood-carving*, and the manufacture of *leather, paper, and tobacco*.

The grandeur of the scenery of Switzerland attracts to this country *tourists* from all parts of the world. Hence, hotel-keeping is an important source of revenue to the Swiss.

**Internal Communication.**—Internal communication is afforded by excellent *roads*, by *steam-boats* on the lakes, and by a network of *railways* penetrating the Alpine valleys, and forming a complete connection between the important towns and industrial districts. The opening of the railway tunnels through the Alps greatly benefited the silk manufactures of Switzerland by facilitating the importation of the raw silk from Italy.

Switzerland has numerous *rivers*, but owing to the nature of the country they are not navigable for commercial purposes. Two of the greatest rivers in Europe, the *Rhine* and the *Rhone*, take their rise in the Swiss Alps, but in the mountainous cantons through which they flow their fall is too rapid to permit of navigation, although suitable for the production of electrical power. So, also, the physical formation of the country is an obstacle to the construction of canals.

**Commerce.**—The greater part of the foreign commerce of Switzerland is carried on with the adjacent countries, particularly with France and Germany. With Great Britain and America, also, the trade is very considerable. The *exports* are principally *clocks and watches; cotton and silk goods; cheese and condensed milk*; and the *imports* are chiefly *food stuffs, raw cotton, and raw silk*.

**Commercial Cities and Towns.**—*Berne*, situated on the Aar River, and 1,700 feet above the level of the sea, is important only as the political capital. It has a population of about 105,000.

*Geneva*, situated at the southern extremity of the beautiful lake of the same name, is the centre of *watch and clock making*. This industry is carried on principally in the surrounding villages. Population, 139,500.

*Zürich*, in the north, is the largest city in Switzerland, and

the most important commercial and industrial centre. It was one of the first cities of Europe to manufacture cotton, and has fine *silk* and *cotton mills*. It has a population of over 214,000.

Basle, a little smaller than Geneva, is the chief railway centre in the country, and Lausanne about half the size.

## CHAPTER XII.

### REPUBLICS OF SOUTH-EASTERN EUROPE.

THE existence of the old Austro-Hungarian monarchy ended during the European war. Towards the end of 1918, it was divided into independent national states.

The west and east boundaries of German Austria are unaltered. In the north the boundary lies about 35 miles north of the Danube.

**Productions.**—Nearly half the population is engaged in cultivating *wheat, rye, barley, the vine, fruit and silk*. *Coal* is found in Carinthia, Carniola, and Tyrol; *copper* at Salzburg; *lead* in Carinthia; *petroleum* and *salt* are found in many districts.

The manufactures, mostly carried on where coal is found, consist of *textiles, delicacies, woodwork, machinery, and chemicals*.

The country carries on a good internal trade by means of the tributaries and main stream of the Danube, and also by numerous canals. The plains offer little difficulty in the construction of railways.

**Vienna** the capital is a great trade and industrial centre. From its situation on the Danube it controls an extensive water traffic. It has manufactures of *silk, shawls, gloves, leather goods, pearl buttons, and machinery*.

### HUNGARIAN SOVIET REPUBLIC.

After the king's abdication in 1918, Hungary was declared a republic, and governed by a Provisional National Assembly. The industries, productions and foreign trade of this state and of Austria decreased during the war of 1914-18, but their vast national resources will lead to an early revival of the trade.

**Productions.**—Cultivation of the soil is the chief industry, the chief crops grown being *wheat, rye, barley, oats and maize*. *Fruit* is cultivated extensively and *tobacco and wine* are grown in the south. Large numbers of *horses, cattle and sheep* are raised and exported annually.

Of minerals, *gold, silver, iron ore, pig iron, coal and lignite* are mined. The principal manufactures are *beer, alcohol, sugar and tobacco*.

**Budapest** the capital (Buda on the west bank, and Pesth on the right) has numerous flour mills, and is the centre of the *grain, cattle and wine* trade.

#### CZECHOSLOVAKIA.

The term Czechoslovaks comprises two branches of the same nation: the seven million Czechs of Bohemia, Moravia and Silesia; and the three million Slovaks of Slovensko in Upper Hungary.

**Productions.**—Much progress in agriculture has been made during the last fifty years. Bohemia is especially productive of *wheat, potatoes and sugar beet*. The abundance of agricultural products has led to the development of the *sugar and brewing industry* in Bohemia, Moravia, and Silesia. Pilsen is noted for its *beer*. The Czechoslovak countries are rich in minerals; *coal, lignite, iron ore, graphite, copper, and gold* being found. The principal manufactures are *pottery, glass* (for which the Bohemians have long been famous), *textiles, wooden articles* and *machinery*.

**Prague**, the capital, has manufactures of *hardware and glass*.

#### YUGO-SLAVIA.

In 1918, the Croatian Assembly proclaimed the complete independence of Croatia, Slavonia, and Dalmatia. On 29th December, 1918, the Ministry of the Kingdom of the Serbs, Croats and Slovenes was formed, representing all the Yugo-Slav provinces and a Greater Serbia was created.



## CHAPTER XIII.

### THE REPUBLIC OF PORTUGAL.

**Position, Area, and Population.**—Portugal occupies most of the western portion of the Iberian peninsula, and is the part of continental Europe nearest to America. It is somewhat larger than Ireland, and has a population of nearly six millions.

**Industries.**—The energies of the people have been devoted mainly to *vine-growing* and, in recent years, to *cattle-grazing*. *Cork* is a product of some importance. Oranges, lemons, olives, figs, and other *fruits* grow in profusion.

There are mines of *copper*, *iron pyrites*, and *wolfram*. The richest of these are worked by English companies, and the product is exported as raw material.

The principal industry is the *manufacture of wine*, which is busily carried on in all parts of the country. The *fisheries* yield sardines, oysters, and tunny, mainly for export to England, Italy, and France.

**Commerce.**—The foreign commerce consists principally of the *export of wine, cork, sardines, cattle, and copper*; and the *import of raw cotton and cotton goods, coal, and sugar*. Most of the sales are to Great Britain, Brazil (a Portuguese-speaking country), Spain, and Germany, and nearly one-third of all the purchases are from Great Britain.

The value of our products sent to Portugal annually is nearly four millions sterling, consisting chiefly of *manufactured goods*. We buy from Portugal merchandise to the value of over three millions, the great items being *wine and cork*.

**Commercial Towns.**—Lisbon, the capital and chief commercial city, is situated near the Atlantic coast ten miles from the mouth of the Tagus. It has 370,000 people, and exports *wine, wool, and olive-oil*. Lisbon is connected by submarine cables with Brazil and England.

Oporto, near the mouth of the Douro, is the principal seaport for the shipment of *wine*, particularly "port" *wine*, so called from the name of the city. *Brocades, laces, and pottery* are made here. Its population is 170,000.

**Foreign Possessions.**—The foreign possessions of Portugal, though of great extent, are not yet of much commercial value.

The Azores are a group of small islands in the Atlantic, 800 miles west of Portugal. *St. Michael*, the largest of these islands, has an area of about 200 square miles. *Oranges* and *pine-apples* are the chief exports.

*Madeira*, in the Atlantic, south-east of the Azores, produces the rich *wine* which bears its name.

The Cape Verde Islands, off the west coast of Africa, export *coral* and *sea-salt*, *coffee*, *medicinal produce* and *hides*. *St. Vincent* is an important coaling station.

*St. Thomas*, an island nearly under the Equator, exports *coffee*, *cocoa*, and *cinchona*.

*Angola*, on the south-west coast of Africa, south of the Congo river, is ten times as large as England, and has large deposits of *iron*, *copper*, *lead*, *sulphur*, *petroleum* and *salt*. The chief exports are *coffee* and *rubber*, and the chief imports *textiles*; most of the trade being with Portugal. The chief town is *St. Paul de Loanda*.

*Portuguese Guinea*, south of *Gambia*, exports *rubber* and other tropical produce.

*Portuguese East Africa* is a strip of territory nearly six times as large as England, extending 1,200 miles along the south-east coast of Africa. It is rich in *coal*, *iron*, *copper*, and *gold*, but the deposits have not been developed. The principal exports are *ivory*, *rubber gums*, and *oils*. The traffic in these is mostly with Portugal and England.

The seaport of *Goa*, on the west coast of India, was at one time an important trading station. The Portuguese district of the same name is less than one-sixth the size of *Wales*. The staple product is *rice*.

*Macao*, a settlement on the south coast of China, not far from *Hong Kong*, is important only as a depot for the preparing and shipping of *tea*.

*Timor*, an island of the East Indies, part of which belongs to Portugal, has great forests of *sandal wood*, which, after *coffee*, is its chief export.

## CHAPTER XIV.

### THE EMPIRE OF TURKEY.

SINCE the conclusion of the first Balkan War (November, 1913) the Turkish possessions in Europe have been considerably lessened, Turkey in Europe being in part divided among the Allied States (Bulgaria, Serbia, Montenegro, and Greece), and in part created into an independent state of Albania. In the early part of the war of 1914-18, Cyprus was annexed to the British Empire and Egypt was declared a British Protectorate. The total area of Turkey's present dominions amount to about 614,000 square miles, and its total population to about twenty-one millions.

#### 1.—TURKEY IN EUROPE.<sup>1</sup>

The soil is generally very fertile, and the climate, though in some districts there are extremes of heat and cold, is, on the whole, favourable to the culture of crops grown in other countries of southern Europe. Agriculture is in a backward condition. Only a small area of the arable land is cultivated, and the system of tillage is primitive. The staple products are the *cereals*—wheat, maize, rye, barley—*cotton*, *tobacco*, and *fruits* of various kinds. Turkey produces and exports large quantities of *raisins*.

The culture of the *mulberry* for feeding silk-worms is an important industry in Turkey. *Vine-growing* and wine-making, with the *fisheries*, yield valuable returns.\* Excellent *sponges* are found off the Mediterranean coast.

*Horses*, *mules*, *sheep*, and *goats* are the principal domestic animals. Horses and mules are exported, as also are sheep-skins and goat-skins.

Turkey is rich in mines of *coal*, *copper*, *lead*, *silver*, *iron*, *sulphur*, and *salt*, but the deposits have not been much developed.

Among the *manufactures* of Turkey are *carpets* and *rugs*, for which the country has long been famous.

\* <sup>1</sup> Now League of Nations territory.

The **rivers** are not commercially important. There are 900 miles of railway. The main line, which starts from Constantinople, has connections which place Turkey in direct railway communication with the rest of Europe, via Nish and Belgrade.

• **Commercial Towns.**—Constantinople, the capital, is the centre of the foreign commerce of Turkey. This city, being greatly favoured by its excellent geographical situation, carries on trade with nearly all the nations of the world. It has a large *caravan commerce* with western and central Asia. The caravans bring mohair, silk, and opium. Adrianople, a fortress, is the only other large city.

**Commerce.**—The chief **exports** are *barley, raisins, goats' hair, wool, cotton, timber, tobacco.*

The chief **imports** are *coal, cotton yarn and goods, woollen goods, iron goods and machinery.* With the division of the land, much trade left the Turkish Empire and, as the annexed territories receive better care, it is unlikely that her former trade will ever be regained.

## 2.—TURKEY IN ASIA.

Asia Minor, or the Levant, comprises the greater part of Asiatic Turkey. It is a region lying between the Black Sea on the north, and Arabia and the Mediterranean on the south, and having Persia on the east, and the Mediterranean Sea on the west.

Turkey in Asia is more hilly than the European part of the empire, except on the lower Euphrates-Tigris basin. The central region is an elevated plateau, dotted with hundreds of hamlets and villages. Here *goats* and *sheep* are herded in great numbers. In the south there are fertile valleys, which produce *wheat, maize, tobacco, cotton*, and numerous *fruits*.

The United Kingdom imports from Turkey in Asia *wool, opium, fruits, skins, and liquorice.* Most of the emery used in the arts comes from this region.

• **Chief Commercial Towns.**—Smyrna, on the Mediterranean coast, is the chief seaport and commercial city. It possesses an excellent harbour, and has trade with nearly all commercial countries. The *rugs* exported from this place, though all woven in the interior of the country, are known in the

markets as "Smyrna" rugs. *Fig-culture* is a great industry in the surrounding region. The *caravan routes*, which terminate here, have been used for centuries, and over them a busy trade is carried on with the interior of Asia.

Damascus, the capital of Syria, is the starting-point for many caravans. In its famous bazaars *oriental products* and wares of every description are sold. It is as large as Smyrna.

Beyrout, on the Mediterranean coast, sixty miles from Damascus, with which it is connected by railway, is a *flourishing commercial port*. It carries on a busy traffic with other Mediterranean ports and, since the opening of the Suez Canal, with India and China.

Mesopotamia. The desert between the Euphrates and the Tigris is administered by the English. Large tracts of land hitherto untilled have been ploughed by the use of mechanical tractors and horses. The building of roads and railways and the improved water transport have resulted in an increase of trade.

## CHAPTER XV.

### THE KINGDOM OF GREECE, ETC.

**Position, etc.**—Greece is the most southern part of the Balkan Peninsula. It has Albania and Serhia on the north, the Mediterranean on the west and south, and off the east the Aegean Sea, an arm of the Mediterranean.

The area of Greece is nearly 41,000 square miles including the territories obtained as a result of the wars with Turkey (1912) and with Bulgaria (1913) and of the European war (1914-18) during which most of the Aegean Islands were annexed. A considerable portion of the inhabitants live in the numerous islands which border the coasts.

There are considerable varieties of climate. In the northern highlands the winters are often severe, but in the plains and coast districts the temperature is generally mild.

**Industries.**—Agriculture, though the occupation of half the people, is in a very backward condition. The chief products are *wheat*, *barley*, and *maize*, besides *cotton*, *tobacco*, and *fruits*. Large crops of *grapes* and *olives* are raised. *Silk-culture* is also carried on, but not so actively as in former years.

A large part of the country is pasture-land. Vast flocks of *sheep* and *goats* in a half-wild state graze on the hills during the summer season.

**Minerals** are present in great variety, and mining is increasing. The ores and other minerals worked include *iron*, *copper*, *zinc*, *lead*, *silver*, *manganese* and *aluminium*. Large supplies of *ores* and *earths* are obtained from the Laurium district, Thessaly, Euboea, and the Aegians. In several islands there are quarries of fine *marble*, of various colours, the most famous being the statuary marble of the island of Paros.

The manufactures are few. *Cotton* and *woollens* for home use are made in the rural districts. *Ship-building* is an industry at some of the seaports; and in many of the towns and islands there are small manufactures of *silk*, *hardware*, *earthenware*, and *leather* goods. The Greeks are skilled in *sculpture*, *marble-cutting*, and *embroidering* in gold and silver.

The system of internal communication has been much improved in recent years. There are now fourteen hundred miles of railway, but Greece has no navigable rivers. Athens is the only European capital not connected by rail with the rest of the continent.

**Commerce.**—The foreign commerce of the kingdom is very considerable, being valued at over £10,000,000 annually. The Greeks have, from early times, been enterprising traders, and to-day they carry on much of the commerce of the Mediterranean. The exports are chiefly *currants* (the seedless raisins of Corinth); *ores*, *olive-oil*, and *wine*; and the leading imports are *cereals*, *metals*, *textiles*, and *timber*. Most of the trade is with Great Britain, Russia, Austria, Hungary, Germany and Italy. The commerce of Greece has been much stimulated by the opening of the *Corinth ship canal*, which greatly shortens the sea passage between Athens and western Europe. The canal cuts through the rocky Isthmus of Corinth, a distance of about four miles. The value of the exports to the United Kingdom is one and a quarter millions, and of the imports from the United Kingdom, over two millions.

**Commercial Cities.**—Athens, the capital, has over two hundred and forty thousand people. This city was famed in ancient times as the centre of art, oratory, and learning. The remains which still exist of its magnificent works in statuary and architecture excite the admiration of the world.

The *Piræus* is the seaport of Athens. It is the *coaling depot* for steamers going to Smyrna, Constantinople, and the Black Sea. It has manufactures of *iron-ware*, *cutlery*, *glass*, and *cotton*.

*Syra*, on an island of the same name in the south-east, is a busy port.

#### MINOR EUROPEAN COUNTRIES.

**Rumania, Serbia, Montenegro, Bulgaria, and Albania.**—These countries lie between Greece and Turkey on the south, and Austria, Hungary and Russia on the north. They formerly formed part of the Turkish dominions, but are now independent. Serbia and Montenegro form part of, Yugoslavia. The inhabitants are chiefly of the Slavonian race.

Rumania lies between the Danube and the Dniester, and has the Black Sea on the east. Its area is almost equal to

that of England, and the population is over seven and a quarter millions. Productions.—There are *great forests*; the farms are small and chiefly grow *wheat* and *Indian corn*; *vineyards* and *sheep ranges* cover great areas. *Coal* is mined, and large quantities of *petroleum* are now exported. The trade is mostly with Great Britain and Belgium. Bucharest is the capital.

Serbia, forming the southern part of Yugo-Slavia, has a population of over four and a half millions, and an area of nearly 34,000 square miles. It is an agricultural country, with a few manufactures. The productions are similar to those of Rumania, and its trade is chiefly with Great Britain, Austria and Turkey. Belgrade is the capital. It is on the Paris-Constantinople Railway, and has considerable river trade. Food products are exported, and manufactured goods are imported.

Montenegro is a small mountainous country also part of Yugo Slavia, bordered on the south by Albania. It has a population estimated at a half of a million, chiefly engaged in sheep-farming and tillage. The farm lands are freeholds of a few acres each, and the woods and pastures of the country are the common property of the people. Cetinje, a village not far from the sea, is the capital.

Bulgaria has the Black Sea on the east, Turkey, Greece, and the Archipelago on the south, Serbia on the west, and the Danube on the north. Population, 4,467,000. Area, 47,750 square miles. Bulgaria consists of the northern slopes of the Balkans from the ridge to the Danube, into which the rivers of the country, which have carved out noble valleys, drain. Eastern Rumania occupies the southern slopes of the Balkans, and comprises chiefly the upper basin of the Maritza. On these southern slopes of the Balkans there are great fields of *roses*, from which *attar*, or *oil of roses*, is made. Where cultivated, the soil is very productive. The people are mainly engaged in agriculture. Productions.—*Stock-rearing* is the chief industry; more *corn* is grown than is required; *large forests* of valuable trees exist, and *hemp* and *flax* are extensively cultivated. Manufactures include *woollens*, *cotton goods*, and *cigarettes*. Exports.—*Wheat*, *cattle*, *tallow*, *hides*, *timber*, *woollens*, *essence of roses*, *tobacco*, *cheese*, and *eggs*. Imports.—*Manufactured goods*—chiefly *textiles*—



*machinery, metal goods, building materials, petroleum, coal, and paper.*

Annual value of exports to the United Kingdom, £491,484; of imports from the United Kingdom, £1,048,626. Chief ports are Varna (41,419) and Bourgas.

The capital is Sofia, with a population of 102,812.

Other important cities are Philippopolis (47,981), Rustchuk (36,255), Seiven (25,142), and Plevna (23,019).

Albania is situated on the west of the Balkan Peninsula, its western boundary being the Strait of Otranto. The independence of Albania was declared at the Conference of London, May 30, 1913, at the close of the Balkan War, when the kingdoms of Bulgaria, Serbia, Greece, and Montenegro captured the western part of the peninsula from Turkey. The boundaries are subject to delimitation by International Commissions, and the southern frontier is to follow a line from a point south of Cape Stylos to the Lake of Ochrida; the estimated area is 12,000 square miles, and its population 1,500,000. Durazzo is the capital, other important towns being Scutari, Valona, and Koritza.

## APTER XVI.

### ASIA GENERALLY.

**Position.**—Asia occupies the greater portion of the land mass of the eastern hemisphere, and presents an area estimated at 16,165,000 square miles, or more than four times that of Europe.

**Physical Features.**—Occupying three great temperature belts—tropical, temperate, and arctic—it is usual to arrange Asia into northern, central, western, eastern, and southern sections.

**Northern, or Russian Asia** includes the whole of the continent north of the Altai and Yablonoi Mountains—a region (as we descend from the mountains) of rocks and forest growth, steppe-land and frozen tundra, bleak and barren, suffering from intense cold in winter, although having warm summers, and thinly peopled.

**Central Asia** embraces the lofty table-lands of *Gobi, Mongolia, Tibet, and Turkestan*—a region of sandy deserts and salt lakes, diversified by mountain-knots that rise above the snow line, and occasionally intersected by narrow valleys.

**Western Asia** exhibits a series of plateaux, and partakes of the desert character of the central region, but is less elevated and more broken up by hill ranges and intervening valleys. The *Khirghiz Steppes*, the *table-lands of Persia*, and the *deserts of Arabia*, belong to this region—the finest portions being Turkey in Asia, Georgia, and the plains of the Tigris and Euphrates.

**Eastern Asia**, or that part embracing the Chinese Empire, Manchuria, and the Islands of Japan, is one of the finest and most diversified sections of the great continent.

**Southern Asia**, including *Hindustan, Further India*, and the *Malay Peninsula*, and lying largely within the tropics, is decidedly the richest and most diversified region of the whole. Varied by minor hill-ranges and well-watered valleys, by deltas and river plains, it enjoys a high though not oppressive temperature, has only a rainy season for its winter, and,

except during long droughts in the lower Indus valley and the Thar desert, presents in every district an unfailing verdure.

**Geological Features.**—Although the geology of Asia is but imperfectly known, we have gathered enough from recent surveys and travels to confirm the belief that every formation<sup>3</sup> is there displayed, and this frequently on a most gigantic scale. All the *economic minerals* and *metals* are found within one or other of its countries. The *precious metals* and *gems* also occur in abundance, and though less noted for its coal and iron than Europe and North America, it has still enough in India, the Indian Archipelago, China, and Japan, to form the basis of a successful mechanical and manufacturing industry.

**Climate.**—A continent stretching over three great continental zones—torrid, temperate, and frigid—must necessarily exhibit great diversity of climate, and this diversity is rendered still more remarkable by the lofty table-lands, arid deserts, and snow-clad mountain masses, that occupy so large a proportion of the central region. On the whole, the continent of Asia does not enjoy the same modifying and tempering influences as Europe. The northern portion is situated on the confines of the polar circle, where the winter's ice is gradually accumulating and overmastering the summer's heat; another large section is raised to an enormous altitude, and placed permanently under snow and glacier. Its mass lies comparatively unbroken by intersecting and tempering seas; it has no burning sandy tracts in the south to send warm breezes, as the Sahara does to Europe. The *Japan Current*, whose genial waters lave its eastern coast, is of minor volume compared with the Gulf Stream; and even its southern or tropical districts are cooled in the winter half of the year by the winds that flow from the snow-clad central mountains. It suffers, therefore, an extreme climate, that is, the summers are very hot and the winters very cold. In the west, in the region of the Caspian and Aral Seas, in Arabia and Iran, and the adjoining part of India, the rainfall is so slight that desert conditions prevail, and agriculture is carried on only where there are rivers flowing from rainier regions. Further east is the high Desert of Gobi. The south and south-eastern countries are in the monsoon regions of India, Indo-China

and Southern China. In summer the monsoon blows from the ocean, bringing copious rains. In winter the land monsoon blows, giving, as in India, a dry cool season.

**Vegetable Productions.**—Among the *fruits* of Asia may be mentioned the grape, orange, shaddock, lemon, lime, tamarind, mangosteen, fig, mulberry, olive, pomegranate, walnut, almond, cocoa, date, bread-fruit, cashew, betel, banana, pine-apple, melon, quince, apricot, peach, and all the garden fruits known in Europe. Among *grains* and *cultivated roots*—maize, rice, wheat, dhourra, barley, peas, beans, lentils, and other leguminous seeds, potatoes, yam, lotus, arrowroot, etc. Among *spices* and *kindred products*—cinnamon, nutmeg, clove, pepper, camphor, cassava, tea, coffee, sugar, sago, etc. Among *drugs*, *dye-stuffs*, *fibres*, and the like—indigo, annatto, saffron, cinchona, gamboge, galls, poppy, rhubarb, aloes, gums, hemp, jute, cotton, and many others; while among the *forest* and *ornamental trees* may be noticed the teak, cedar, sycamore, cypress, mangrove, bamboo, banyan, plantain, cocoa-nut, and other palms, along with ebony, iron-wood, box-wood, sandal-wood, and others of a kindred nature.

**Fauna.**—The *Animals* of Asia excel both in nobleness of form and in numbers. Among the *mammals* may be noticed the apes and monkeys of the south; the lion, tiger, elephant, rhinoceros, and tapir of India; the wolf, hyena, jackal, blue and black fox, and numerous varieties of dogs; the horse, ass, and camel of the central and western plains; the common ox, buffalo, aurochs, yak, and musk ox; the elk, reindeer, antelope, axis, argali, ibex, goat, sheep, mutton, etc.; porcupine, jerboa, marmot, lemming, beaver, bat, ermine, etc.; together with bears, badgers, gluttons, sea-otters, seals, sea-cows, and other cetacea. Her seas, lakes, and rivers are stocked with valuable *food-fishes*, though less notably than those of Europe. Red coral, mother-of-pearl, and pearls are fished from the gulfs, and among her special *insect-products* may be noted her silk, honey, bees-wax, cochineal, gall-nuts, lac, and other kindred substances.

**People.**—Ethnologically the continent of Asia is occupied by three main varieties of mankind—the Caucasian, Mongolian, and Malay; the first inhabiting the south and west, the second the north and east, and the third the south-eastern

region and adjacent Archipelago. Mountain and desert form barriers more impassable than seas ; and, thus, altogether apart from the peculiarities of the Mongolian and Malay races, there has been none of that commingling that has marked the progress of mankind in Europe.

## CHAPTER XVII.

### THE EMPIRE OF JAPAN.

**Position, Area and Population.**—Japan comprises numerous islands, lying off the east coast of Asia; between them and the Asiatic mainland is the Sea of Japan. Korea became part of this empire by the treaty of August 23, 1810.

Honshiu, or Nippon, is the largest of the islands. Yezo lies to the north of Honshiu. The other two of the large islands, Shikoku and Kiushiu, are south of Honshiu, while Formosa lies on the tropic of Cancer. Taken altogether, they have an area of 235,886 square miles, and the population of the whole country is more than 56,600,000, three-fourths of whom live in the Island of Honshiu.

**Configuration and Climate.**—Japan is, to a great extent, a mountainous country, and many of the mountains are volcanoes. Destructive earthquakes have often taken place, and slight shocks are of frequent occurrence.

In the northern islands the climate is cold. The central island of Honshiu has a generally temperate climate, while in Kiushiu, and the other southern islands, owing to the Japan Current and the latitude, the climate is semi-tropical, and in Formosa tropical.

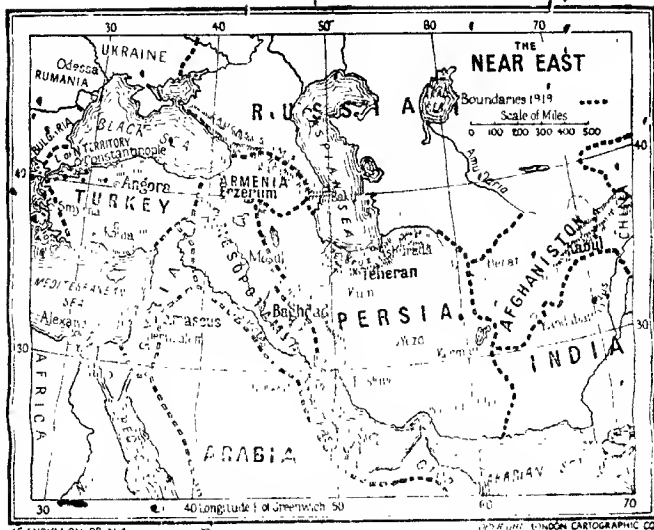
The prevailing winds of the Sea of Japan are *monsoons*. The revolving storms, or *cyclones*, known as *typhoons*, are peculiar to the Japan and China seas. They occur generally in July, August, or September, and do great damage to property on land, as well as to shipping.

**Industries.**—About one-eighth of the area of the country is under cultivation. The leading field crop is *rice*, which forms the chief food of the people. In the south, *tea*, *sugar*, and the *mulberry* are extensively grown.

Among the other agricultural products are *barley*, *rye*, *wheat*, *tobacco*, *indigo*, and *millet*. The Japanese are skilled and industrious farmers. Their fields are well kept, and most of the tillage is done with spade and hoe.

The forests of Japan cover one-third of the area. They







supply useful woods in great abundance, including *oak*, *cedar*, *pine*, *maple*, and *camphor-wood*. From the bark and twigs of the *paper mulberry*, the Japanese make paper. From the berries of the vegetable-wax a beautiful white wax is prepared. This is exported in considerable quantities to Great Britain, where it is used in candle-making.

The domestic animals are horses and cattle. The *cattle* are small, but sturdy, and are used only as beasts of draught and burden.

The mineral wealth of the country is very great. Mines of *silver*, *copper*, *iron*, *coal*, and *sulphur* are extensively worked. Copper is found in nearly all parts of the islands, and is manufactured into various kinds of household articles, besides being exported. Coal is exported, most of it to Bombay, and petroleum is now worked in *Echigo*. There are numerous deposits of *gold*, once busily worked, but now somewhat neglected, because the foreign demand for *tea*, *silk*, and other Japanese products has raised the wages of labour.

Though Japan cannot be called a great manufacturing country, the natives have attained a high degree of excellence in many of the mechanical arts. In the production of numerous small articles of use and ornament, they display a wonderful ingenuity and delicacy of workmanship. Recently, under the supervision of European overseers, the factory system has been introduced into Japan, and every western industry is being established. Each year sees a larger and larger surplus of manufactures exported to the great markets of Asia.

Their superior skill and exquisite taste in *lacquer-work* have long been so widely recognised that the art has everywhere come to be known as *japanning*. The varnish used by the Japanese in this process is the milky juice of the lacquer or varnish-tree, found in the northern parts of the country. *Porcelains* and *bronzes* of beautiful designs and artistic finish are also among the characteristic products of Japanese skill. *Silk fabrics* are extensively manufactured. Among other industries are the making of *paper*, *glass*, and *cement*. The fisheries give profitable employment to large numbers of people inhabiting the many villages along the coasts. *Cod*, *lobsters*, and *oysters* abound in the numerous bays.

**Internal Communication.**—Internal communication in Japan

has been greatly improved by the extension of *railways*, which connect the chief commercial cities.

*River navigation* is used in the transport of merchandise from the interior to the coasts. On some of the rivers small steamers ply for short distances but flat-bottomed boats are more generally used.

**Commerce.**—The foreign commerce of Japan has greatly increased within the last thirty years; its present value is over three hundred and fifty millions sterling. Over a quarter of the total exports consist of *silk*. Next in importance come *silk manufactures*, *cotton manufactures*, *copper*, *matches*, *matting*, *earthenware*, and *camphor*. The bulk of the imports consist of *raw cotton* and *cotton goods*, *iron*, *steel*, and *machinery*, *rice*, *oil-cake*, *wool*, and *woollen goods*, *sugar*, and *petroleum*. Most of the foreign trade is with the United States, China, Great Britain, India and France; the United States being the largest purchaser from Japan, and the largest exporter of goods to Japan.

The value of the articles imported by the United Kingdom from Japan is £24,000,000 sterling; the chief articles being *silk goods* and *straw-plait*, while the articles exported from this country to Japan amount to £7,500,000 sterling; including *machinery*, £2,000,000; *metal goods*, £1,439,766; *cottons* and *woollens*, £2,500,000.

**Commercial Towns.**—Tokio, formerly called *Yedo*, the capital of Japan, situated on the east coast of the island of Honshiu, has a population of two millions and a quarter. It exports *silk*, *copper*, and *lacquer work*, mostly through the port of Yokohama, with which it is connected by rail.

**Yokohama**, the seaport of Tokio, is seventeen miles distant from that city. It is the greatest commercial port and the principal distributing centre of the Empire. The population is greater than that of Bristol.

**Osaka**, an important mercantile city in the south of Honshiu is the centre of a great *tea-farming district*. The Japanese military arsenal and iron foundries are located there, and it is the centre of the cotton-spinning industry. Its population is 2,245,000.

**Kiotō**, the ancient capital, is a beautiful city in the island of Honshiu. *Bronze goods* and *porcelain* are made here. Its inhabitants number 539,000.

**Nagasaki**, in the island of Kiushiu, has one of the finest harbours in the world. The beautiful porcelain and ornamental work in carved wood and ivory, for which Japan is famous, are largely produced in and near this city. *Coal*, *camphor*, and *tea* are shipped from this port.

**Nagoya**, an important commercial city, stands in the centre of one of the largest plains on the east of Honshiu, where much rice is cultivated.

**Kobe**, near Osaka, shares the import trade of that city.

**Korea** lies between 122° and 128° E. long. and between 34° and 43° N. lat., and its coast is fringed with numerous islands of which the largest is Quelpart. Its total length from north to south is 600 miles, while its greatest breadth from east to west is 135 miles; its area is about 84,000 square miles. The population is about 17,500,000. The country is fertile but mountainous, except in the river valleys. The chief products are *rice* and other cereals, *beans*, *cotton*, *tobacco*, and *hemp*; *ginseng*, much used by the Chinese, is grown in the province of Pyeng-An, and, being a Government monopoly, is a rich source of revenue. *Gold*, *copper*, *iron*, *coal*, and other minerals exist in the country. There are 638 miles of railway. The total imports amount to £6,720,000 and the total exports to £3,000,000. Seoul (175,000) is the largest town and seat of government; the open ports are Chemulpo, Fusan, Wonsan, and others.

## CHAPTER XVIII.

### THE REPUBLIC OF CHINA, ETC.

**Position, Area, and Population.**—China occupies a vast territory in middle and eastern Asia. It lies south of Siberia, and its coast-line of about 2,500 miles is washed by the waters of the Pacific Ocean. Besides China Proper, this great country includes the provinces of Tibet, Mongolia, 'Manchuria,' and Chinese Turkestan. Its area, nearly four and a half millions of square miles, is much greater than that of Europe. It covers about one-twelfth of the earth's land surface, and its population, which is estimated at 421,000,000, is greater than that of our Indian Empire. China Proper is the southeastern portion of this extensive territory. It comprises little more than one-third of the total area, but contains more than nine-tenths of the population.

**Soil, Climate, and Productions.**—In the northern provinces of China the climate and agricultural products are generally the same as those of Northern Europe. In the central provinces, the richest portion of the country, *tea* and *silk* are the chief products. In the south the climate is tropical. Here are raised vast quantities of *rice*, which is the staple food of the masses of the people. *Sugar* and *tobacco* are cultivated in the central and southern provinces.

The *poppy*, from which opium is made, is raised in nearly all the provinces, but the area is being lessened every year by law. Nearly the whole area of China Proper is arable land, and all of this is skilfully cultivated, the spade being the principal implement of tillage. The northern dependencies are sparsely peopled and contain vast areas of forests and prairie. In the river-basins there are fertile districts, which produce *cereals*, *cotton*, *hemp*, and *tobacco*. The mountainous province of Tibet is famous for its fine wool, obtained from the Tibet goat.

The principal minerals of China are *coal*, *iron*, and *copper*. Probably no country in the world contains such vast deposits of *coal*. The greater part of the northern province of Shansi is one vast coal-field. Shansi has also extensive mines of

iron. In several other provinces coal and iron exist in abundance. *Copper-mining* has for centuries been an active industry in the south-eastern province of Yunnan. Beds of *kaolin* are plentiful, and *precious stones* are found in many districts.

**Manufactures.**—*Silk* and *porcelain* are the best known manufactures of China. In the making of porcelain or china ware, appropriately so called, the Chinese were for centuries unrivalled, but their products in this industry are now inferior in quality and finish to those of western countries. The Chinese still maintain their superiority in the manufacture of rich silk fabrics, and in many departments of artistic handicraft. Their carvings in ivory and wood, their antique bronzes, and their filigree work in gold and silver are universally admired.

**Commerce.**—The internal trade of China is of vast extent. It is carried on chiefly by means of the numerous canals and navigable rivers. Two great rivers, each of them thousands of miles in length—the *Hoang Ho*, or Yellow River, in the north, and the *Yang-tse-Kiang* in the south, traverse the country from west to east, although the Hoang Ho is used only by small boats.

The basin of the *Yang-tse-Kiang* comprises an area of 750,000 square miles, on which are settled nearly half the population of the country. The river is navigable for 1,000 miles, and on its banks are several of the greatest cities of China. Another large river, the *Si-Kiang*, in the extreme south, flows into the sea near the city of Canton, whence it is often called the *Canton River*. It is navigable for 150 miles for small vessels. Canals joining their tributaries join the *Si-Kiang* with the *Yang-tse* at the *Tung-ting* and *Po-yung* lakes.

The **Grand Canal**, though partly fallen into disuse, is an important channel of communication in the coast provinces. It is 700 miles long, and traverses the productive districts lying between Shanghai and Tientsin.

The foreign commerce of China is mostly with Japan, followed by Great Britain and British colonies, and the United States.

*Silk*, raw and manufactured, *tea*, *sugar*, *raw cotton*, *hides*, and *straw braid* are the chief exports; tea and silk forming about two-fifths of the total value.

The chief imports are, in order of their value, cotton goods, *opium*, *rice*, *sugar*, *metals*, and *petroleum*. One-quarter of the imports consists of cotton goods, and about one-fortieth is opium.

The exports to the United Kingdom, valued at about ten millions sterling, consist of *tea*, £1,546,320; *silk*, £1,137,000; *hides*, £658,000; and *bristles*, £407,000.

The imports from the United Kingdom, valued at about £8,500,000, consist of *textiles*, £5,866,325; *metal goods* and *machinery*, £1,089,864; and *tobacco*, £1,649,533.

**Commercial Towns.**—Peking, the capital, is situated in the north-east, about 100 miles from the sea. It has a population of a million. Its commercial importance lies in its inland trade.

Tientsin, the port of Peking, is a city of about the same size. Being one of the "treaty ports," it has an active foreign commerce. As the northern terminus of the Grand Canal, and of the new railways, it enjoys a great interior trade. This place has also a valuable caravan commerce with European Russia.

Canton, the chief seaport of South China, is about as large as the cities already named. It exports *tea*, *silk*, and *sugar*, and imports *cotton* and *opium*. Canton has numerous silk and cotton mills. Until 1842 Canton was the only Chinese port open to foreign trade. There are now more than twenty treaty ports.

Shanghai, on the east coast, near the mouth of the Yangtse-Kiang, is one of the treaty ports, and the first of the empire in the extent of its foreign commerce. It is also of great importance in inland trade, as the principal eastern depot of products in transit between the northern and southern provinces.

The western nations are now taking steps to secure much of the trade of China, which has hitherto been chiefly in the hands of the British. Germany and France in 1898 compelled the Chinese Government to lease them certain ports for terms of ninety-nine years. Germany obtained Kiao Chau in the north, and France Kwang Chau in the south. The United States and Japan are also making a bid for a larger share of the commerce. In 1914 Japan annexed the German rights, and in 1915 promised to restore the land to China in return for certain commercial rights.

## MINOR ASIATIC COUNTRIES.

There are a few countries of Asia that have no great intercourse with the western world, but which, owing to their size and their increasing civilization, must in time become better known and more important. They are *Siam*, in south-eastern Asia, and the countries which occupy the great *Plateau of Iran* in south-western Asia.

*Siam* is a country lying between the British and the French possessions, in the Peninsula of Indo-China. The population, about half of whom are Chinese and Malays, is estimated to number 8,150,000. There is little settled industry. The mass of the people are in a condition of serfdom to their local governors. There are teak forests in the northern part. Rice is the chief export; and the trade of the country is largely in British hands. The upper part is mountainous, the lower flat.

*Bangkok*, the capital, is situated on the Menam River, about twenty miles from the Gulf of Siam. It is said to have a population of half a million. The city is but little above the level of the river, and is traversed by numerous canals. Most of the people live in squalid poverty. Their wretched hovels are in painful contrast with the royal palaces, and with the European quarter in which are street cars, iron bridges, and substantial buildings.

*Persia* occupies the western part of the Plateau of Iran. It lies to the east of Turkey, and between the Caspian Sea and the Persian Gulf. A great part of this area is desert. The population is thought to number about 9,000,000. Outside of the towns and villages the people are mainly tent-dwellers, depending on their flocks.

Fruits in great variety, the opium poppy, tobacco, and the mulberry are cultivated. Silk is chiefly produced in the Caspian provinces. Opium is exported to China and Europe, and wool to Bombay and Marseilles. The hand-made carpets of this country have a world-wide reputation. Goods going to India and China are shipped from the ports of the Persian Gulf. Trade with Europe is partly from Caspian ports, and partly by caravan.

*Teheran*, the capital, is situated in the northern part. The city is about as large as Bristol. The only other considerable

town is *Tabriz*, in the extreme north-west, near the Caucasian boundary.

**Afghanistan** and **Baluchistan** are countries not well known, occupying the eastern part of the Plateau of Iran, and lying between Persia and British India. There is railway communication through the Bolan Pass with the cities of northern Hindostan.

**Afghanistan** separates Asiatic Russia from British India. The whole country is a lofty plateau. Afghanistan is about half as large as Persia, and has a population estimated at 4,500,000. The Afghans are nominally subjects of the Amir of Kabul; but, in fact, this warlike people can hardly be said to form a nationality. The country is one of tribes and village clans.

There are no rivers and no good roads. Goods are camel-carried, and trade is mainly with the cities of India by way of the Himalayan passes. There are three considerable cities—**Kabul**, the capital, **Kandahar**, and **Herat**—all situated on caravan routes. Silks are produced at all of these places; carpets at Herat; and dried fruits are sent out from Kandahar.

**Baluchistan** lies between Afghanistan and the Arabian Sea. There is scarcely anything that can be called a government. The lawless Baluchis divide their time between tending their flocks and plundering their neighbours.

In theory the people are subjects of the Khan of Khelat. The British have encroached upon the country until the greater part of it has been made a province of British India. The influence of the British political agent is paramount, and Baluchistan cannot be considered as independent, even in regard to its internal administration. They have similarly brought parts of the Afghan territory into their "sphere of influence," regarding the control of the region south of the Hindoo Koosh range as necessary to secure British India from possible Russian aggression.

The surface of Baluchistan is elevated and rugged, and, except in the valleys, barren and almost waterless. Dried fruits and vegetable dyes are exported to the cities of India.

**Khelat**, the only considerable town, is the capital. It is situated in the northern part, at a point 7,000 feet above the sea-level.



## CHAPTER XIX.

### 'NORTH AMERICA GENERALLY.

**Position.**—Like Europe and Asia, North America lies chiefly within the north temperate zone; has its coast-line well diversified by bays, gulfs, peninsulas, promontories, and numerous outlying islands. South America, on the other hand, lies, like Africa, mainly within the tropics; is also slenderly united to the north by a narrow peninsula, has a coast-line little broken by indentations, and has, in like manner, fewer and less important islands.

**Structure.**—Unlike the Old World, the trend of whose main mountain-masses is from west to east, or across the continent, the New World has its mountain-chains arranged longitudinally, and this disposition confers, of course, on its surface many important distinctions. On the whole, the continent of North America has a large extent of coast-line, and there is easy access to the interior by the St. Lawrence and the Great Lakes, the Mississippi, and to a lesser extent by Hudson Bay. Approach to the interior from the west is difficult on account of the high mountain country to be crossed.

Physically, the continent of North America may be arranged in the following regions:—

The **Pacific maritime region**, extending northwards from the extremity of the Californian peninsula to Alaska, and consisting of the western edge of the great mountain region.

The **Western Highlands**, bordered by the coast ranges on the Pacific side and the Rockies on the east, between which is a plateau region, broad in the south and narrowing towards the north.

The **Eastern, or Atlantic Highlands**, stretching from the Gulf of St. Lawrence, almost to the Gulf of Mexico, and known as the Appalachian system.

The **Central Upland**, a low plateau region extending from the Rockies to the coast of Labrador and including the plateau of the Great Lakes.

The **Great Central Plain** of the Missouri and Mississippi extending from the *Rocky Mountains* on the west, to the *Alleghanies* on the east, and from the Gulf of Mexico northward to the 50th parallel. On the east this region is rich and well wooded; in the middle it is open or rolling prairie ground; but not unfertile; but towards the west it is dry and sandy.

The **Great Northern Plain** beyond the parallel of 50°, dotted on its southern limits by pine-forests, but beyond this, for four-fifths of its area, a bleak and desolate waste, overspread with numerous lakes, and resembling Siberia in the physical character of its surface and the rigour of its climate.

To these may be added the frozen region of Greenland and the Arctic islands—a division of the globe doomed to perpetual snow, ice, and glacier, and whose wealth arises more from the temporarily open seas that surround it, than from the land of which it is composed.

The narrow region of **Central America**, which lies between the Gulf of Mexico and the Pacific, and is traversed by mountain ranges which leave but a strip of low land along the sea-coasts, while, in certain portions of the interior, they form elevated table-lands. This region is strictly inter-tropical, and, along with the West India Islands, is marked by a tropical flora and fauna, except in the most elevated portions of the interior.

**Geology.**—Geologically, this continent presents every stratified formation, from the old crystalline schists of the St. Lawrence and the Appalachians down to the recent alluvia of the Mississippi, and from the granites, syenites, and porphyries of the Rocky Mountains down to the recent ejections of the Mexican volcanoes. The great central plain, from the delta of the Mississippi north to the Arctic Ocean is chiefly of recent origin, and, consequently, yields comparatively few mineral or metallic treasures, but in the other regions the economic minerals are numerous and abundant. Of these may be mentioned *granite* and *building stones* of every description, *limestone*, *marble*, and *gypsum*; *salt* and salt springs in great abundance, and from several formations; *coal*, both anthracite and bituminous, in inexhaustible fields in the United States and Nova Scotia. The chief metals are—*gold* in California, British Columbia, Mexico, and the

Yukon; *silver* in the Central United States, Mexico, and Canada; *iron* in the United States, Canada and Mexico; *copper* abundantly in the north of the United States and south of Canada, and the far north; *lead* also is abundant in the Western States and Canada; and *tin*, *mercury*, and *antimony* are found in Mexico and California.

**Climate.**—The greater part of North America is in the temperate zone; the far north is within the Arctic Circle; while the south of Florida is only one and a half degrees from the Tropic of Cancer. Over such a vast area there are naturally many varieties of climate. The Pacific coast has an oceanic climate, cool and damp in the fiord region of the north as in Norway and the west of Britain; warmer with dry summers in the south as in Spain and north Africa, making irrigation necessary. The southern portion of the great central plain, along the Gulf of Mexico, has a sub-tropical climate, with abundant rain. A large part of the western plateau region, as around the Great Salt Lake, is desert, except in the irrigated areas. The Arctic regions and Labrador are frozen during the greater part of the year, Hudson Bay being open to navigation only from the middle of June till October. The whole central region, with the exception of the parts mentioned, from the Rockies to the Atlantic, has an extreme climate, with the hottest summers in the south and the severest winters in the north. The Gulf of St. Lawrence and the Great Lakes are blocked by ice four months of the year. In all this region there is sufficient rainfall for agriculture, except along the foot of the Rockies, where, both in Canada and the United States, irrigation is generally necessary.

**Flora.**—From the Isthmus of Panama north to the 27th parallel, the vegetation (with the exception of that on the higher table-lands) is altogether tropical; and, hence, all the low grounds of the West India Islands and Central States teem with the products of that zone. From the 27th parallel north to the 35th parallel is the warm-temperate zone of the continent, marked by its magnolias, swamp-hickories, lobelias, deciduous cypress, and luxuriant climbers and aquatics; and between the 35th and 44th parallels may be said to lie the true temperate zone, characterised by its oaks, ashes, hickories, planes, and white cedars, and growing

in perfection all the cultivated fruits and grains. North of the 44th parallel to the basin of the St. Lawrence and Canadian lakes stretches the colder temperate zone, with its oaks, elms, birches, maples, red and white pines, and the ordinary fruits and grains of Europe. From an economic or agricultural point of view, it may be stated that all the common garden fruits of Europe can be reared in the northern states of the American Union, while oranges, pomegranates, melons, figs, peaches; grapes, olives, almonds, etc., can be grown in the south. Indian corn is cultivated in all parts to the south of Maine; tobacco as far as 40°; cotton to 37°; the sugar-cane to 32°; rice in the Gulf states, wheat all over the Union, oats and rye chiefly in the north, and hemp, flax, and hops in the western and middle districts.

**Fauna.**—All the *domestic animals* of the Old World—the horse, ass, camel, ox, sheep, goat, pig, dog, cat, poultry, and the like, have been introduced with much success in North America, and have spread with the colonists over every habitable region of the continent.

## CHAPTER XX.

## THE REPUBLIC OF THE UNITED STATES.

**Situation and Extent.**—The territory of the United States, Alaska excepted, lies wholly within the North Temperate Zone. It covers the continent of North America from the Atlantic Ocean to the Pacific, and extends from the Great Lakes, on the north, to the Gulf of Mexico on the south.

The average length of the country from the Atlantic to the Pacific coast is about 2,500 miles, and the average breadth from north to south is about 1,300 miles. The total area, including Alaska, is in round numbers three and a half million square miles, nearly as great a surface as that of all Europe.

**Climate.**—The climate of the United States varies, from the long, severe winters, and the short, hot summers of the north, to the more equable, sub-tropical seasons of the south. In the same latitude the climate of the Pacific coast is much more equable than that of the Atlantic States. Winter in California is merely a rainy season. In the Gulf States and on the coast of Washington and Oregon the rainfall is copious. In the Atlantic States, especially near the sea-board, the supply is less, but abundant. In the northern half of the Mississippi valley the rainfall, though somewhat smaller still, is distributed with considerable evenness throughout the year. Over the greater part of the Pacific Highland the annual fall is scanty, while parts of Utah, Nevada, Arizona and south-eastern California are practically rainless. • •

**Configuration.**—The surface of the country is greatly diversified. Not far from the Atlantic coast, and having a general direction parallel with it, extends, from Maine almost to the Gulf of Mexico, the Appalachian Mountain System. The various ranges that make up this system, together with the lands they have uplifted above the coast level, are known as the Atlantic Highlands. Occupying most of the western part of the country, and similarly extending in a general northerly and southerly direction, are the many ranges of the Sierra Nevada and Rocky Mountains. These, with the

plateaux that lie between them, constitute the **Pacific Highlands**. Between these highlands, and occupying the greater part of the interior of the United States, is the vast basin of the **Mississippi River** and its tributaries. This region is called the **Central Plain**. The narrow strip of sloping plain which lies between the **Atlantic Highland** and the eastern coast is known as the **Atlantic Plain**. The much smaller area between the **Pacific Highland** and the western coast is called the **Pacific Slope**, or the **Pacific Coast Plain**. On the northern boundary several states contribute waters to the lakes which border upon them. The State of **Michigan**, in particular, has most of its boundaries formed by four of these lakes.

Of the drainage systems of the United States the most important are those of the **Mississippi** and the **Great Lakes**. The **Mississippi** system drains more than half of the area of the United States, intersecting or bordering upon two-thirds of the States and territories. Fifty-seven tributaries are comprised in this system. Of these, by far the most important are the **Missouri**, **Ohio**, **Arkansas** and **Red Rivers**.

Of the **Great Lakes**, one, *Lake Michigan*, is wholly within the borders of the United States, and the other four form a considerable part of the northern frontier of the Union. Further to the east, but also tributary to the **St. Lawrence River**, is *Lake Champlain*. This body of water, though more than 100 miles in length, is much smaller than any of the **Great Lakes**. It lies almost wholly within the territory of the United States. Crossing the **Atlantic Plain** in a general south-easterly direction are numerous rivers, most of which are broken by rapids or falls, so that they are navigable only in their lower courses. Three of these rivers, the **Hudson**, the **Delaware**, and the **James**, are of great volume, and afford unbroken water-ways for many miles into the interior.

Flowing into the **Gulf of Mexico**, but forming no part of the **Mississippi** system, are numerous rivers which play an important part in the industries and trade of the **Southern States**. Of these rivers the greatest is the **Rio Grande**, which has its head waters in **Colorado**, and forms the boundary between **Mexico** and the State of **Texas**. This river is navigable only for vessels of light draught.

The rivers of the **Pacific Slope** are relatively few. In the far north-west is the **Columbia**, which, in the lower part of its

course, separates the States of Washington and Oregon. The long, narrow, and highly fertile valley of California is watered in its northern half by the *Sacramento River*, and in the southern half by the *San Joaquin*. In the south-west is the *Colorado*, which pours into the Gulf of California most of the drainage of Utah and Arizona.

More than half the boundaries of the United States consist of coast-line upon the two oceans and the Gulf of Mexico. The Atlantic and Gulf coasts are irregular, and the North Atlantic coasts are deeply indented by the estuaries of a number of rivers, and large bays and safe and commodious harbours are numerous in this part. *Long Island Sound*, *Delaware Bay*, and *Chesapeake Bay* are the largest of these arms of the sea. On the Pacific side of the continent there are but three great harbours—*Puget Sound*, and the bays of *San Francisco* and *San Diego*.

**Natural Resources.**—The vast territory of the United States, in its varieties of climate, its forest-covered mountain ranges, its well-watered plains, and its rich mineral deposits, possesses natural resources of the greatest diversity.

The *Atlantic Plain* has a generally fertile soil, numerous rivers affording water-power in their upper courses, and navigable channels nearer the coast, besides the great commercial advantage of proximity to the eastern sea-board.

The *Atlantic Highland* is for the most part covered with hard-wood forests, and contains valuable deposits of *coal*, *iron*, and *petroleum*.

The chief natural advantages of the *Central Plain* are its vast area of fertile soil, its navigable rivers and lakes, and its mines of *coal*, *iron*, *copper*, and *lead*. In the northern part, at the head of navigation on many of the rivers, are fine supplies of water-power.

The *Pacific Highlands* are richer in deposits of metallic ores than any other region in the world. *Gold*, *silver*, *copper*, and *lead* are the principal products of the mines. Cone-bearing trees of many varieties cover a large part of this area, especially in the north-west. In the valley of California the soil is of extraordinary fertility.

**Population.**—The population of the United States is now estimated to be in round numbers 100,000,000, the north and the east being the most densely peopled parts of the country.

About one-tenth of the American people are negroes, the descendants of blacks brought from Africa as slaves. Nearly all of them are in the southern half of the country, where they and their ancestors for several generations have been native to the soil. There are 266,000 Indian descendants of the aboriginal Americans now living in the United States. About one-fourth of them have their homes in Indian territory, and are peaceful and considerably civilized. The rest occupy lands reserved for their use in remote and unsettled parts of the country.

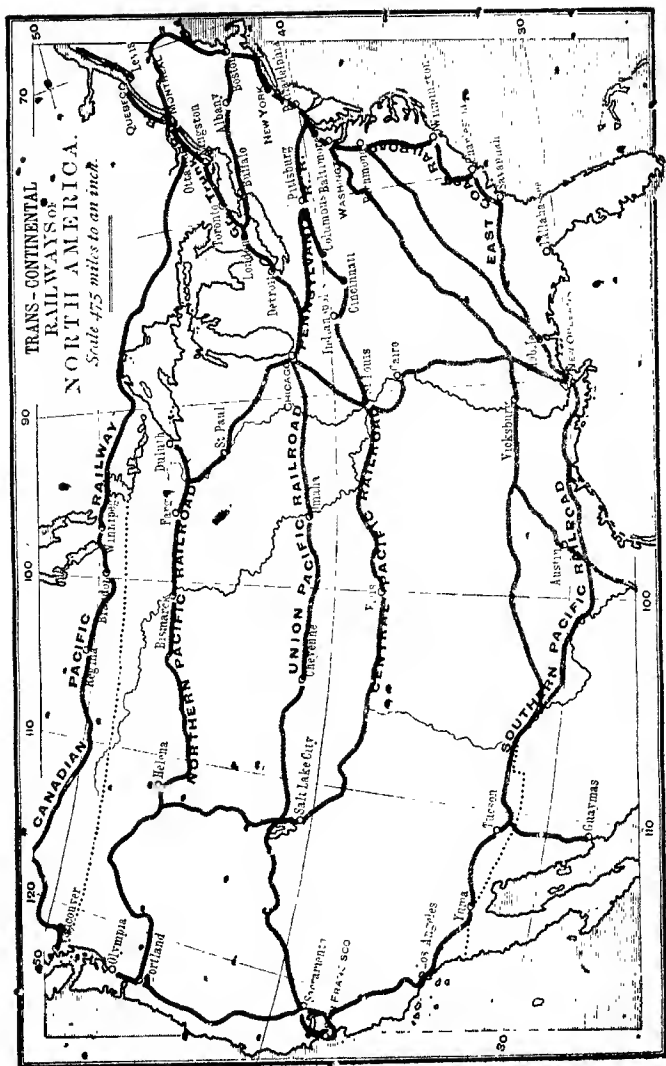
About 75,000 Chinese are widely distributed throughout the cities and towns of the Union. The majority are in the Pacific States, where they are employed as day-labourers and domestic servants; those living in the eastern half of the country are nearly all laundrymen.

Of the population of the United States, about one-third is dependent on agriculture; one-fourth on manufactures and mining; and the larger part of the remaining fourth is occupied either in wholesale and retail trade, or in the various departments of the business of transportation. The number engaged in lumbering and the fisheries, though considerable, forms but a small percentage of the total population.

**Industries.—Products of Agriculture.**—Four of the great staples, *cotton*, *wheat*, *Indian corn*, and *tobacco*, are partly used at home and partly sold to foreign countries. *Cotton* is, commercially considered, the most valuable field product of the United States. The cotton-growing region is in the Gulf States, the most important of which are Texas, Georgia, Mississippi, Alabama, South Carolina, and Arkansas. The United States produce more wheat than any other country in the world. The richest wheat fields are in the north-western part of the Central Plain, and in the States of the Pacific Slope; the most productive states being, in order, Minnesota, North Dakota, Nebraska, South Dakota, Washington, Indiana, and Illinois. *Indian Corn* flourishes in the region south of the wheat-producing area; that is, in the States that occupy the central part of the Mississippi basin, chiefly in Iowa, Illinois, and Nebraska. *Tobacco* is a staple field product of Kentucky, North Carolina, Virginia, Ohio, Tennessee, Wisconsin, and Pennsylvania. Crops that enter mainly into domestic trade, because they are almost wholly







consumed at home, are—*oats*, raised in great quantities in Iowa, Illinois, and all the Lake States; *rice*, now chiefly cultivated in Louisiana, Texas, and Arkansas; *cane-sugar*, raised principally in Louisiana; *beet-sugar*, two-thirds of which comes from California and Michigan; *hops*, grown in the States of Washington and New York; *hay*, *potatoes*, and other root-crops.

The *grape* is now carried by rail great distances to the large cities in specially constructed cars, and *wine-making* is carried on, not far from the seats of vine-culture. The chief of these are in California, which is by far the most important, Ohio, North Carolina, and Western New York.

The greater part of the *beef* supply is raised on the vast grassy plateau that lies to the east of the Rocky Mountains. *Hides* become a commodity of trade at the various points where the beef is dressed for market. Cheese is mainly derived from New York and the other States that border on the great lakes. *Wool* and *sheepskins* come from Ohio, Illinois, Texas, and the Western States of the Central Plain, in which *corn* is grown for the fattening of live-stock, especially hogs, of which vast numbers are kept.

**Mineral Products.**—The United States is a country rich in a great variety of mineral deposits. Of *coal*, *iron*, and *copper* the products surpass that of any other country in the world. The *precious metals*, *aluminium*, *petroleum* and *natural gas*, *lead*, *salt*, and *building stone* also abound. Deposits of *coal* exist in nearly all the States of the Union; *anthracite* in Pennsylvania only; *bituminous coal* in that and other States; and *lignite* in the Western Highlands. Beds of *iron ore* are as widely distributed. *Copper* is found in Montana, Arizona, New Mexico, and Michigan. A large part of the world's product of *gold* and much of the product of *silver* are mined in the Pacific Highlands. *Petroleum* is found chiefly in California, Pennsylvania and Ohio; *lead* in Colorado, Missouri, and the region where Wisconsin, Illinois, and Iowa meet; *salt* in New York, Michigan, West Virginia, and Kansas; and *building stone* of various kinds in many of the States, but especially in those of the Atlantic Highlands. All the *borax* used in the States is found in California.

**Means of Communication.**—The navigable rivers, lakes, and coast waters of the United States, together with the canals

that connect them, form a system of domestic trade-routes almost as important as that furnished by the railways:

**Rivers.**—Of the rivers of the country, the Mississippi and its numerous affluents make up a system of the greatest commercial consequence. By means of barges and steam-boats of light draught, it provides transportation for the more bulky goods produced in the Central Plain. The principal items in this traffic are coal, iron-ore, petroleum, cotton, grain, sugar, with cotton-seed and its oil.

The large cities situated on these water-ways—Pittsburg, Cincinnati, Louisville, St. Louis, Kansas City, Minneapolis, St. Paul, Memphis, and New Orleans,—whose early prosperity was due to river traffic, are still greatly benefited by it. The relative trade consequence of all river systems has been somewhat diminished by the multiplication of railways. This is especially true of the Mississippi. The Hudson River derives its chief importance from the fact that it forms part of a continuous water-route between the Atlantic sea-board and the States which border on the Great Lakes. The Delaware River is navigable to Trenton, and provides a highway for the coastwise trade of Philadelphia, especially in the item of coal. At Chester and Wilmington, on its banks, are great shipyards.

**Lakes.**—The Great Lakes, which form part of the northern boundary, are a busy commercial highway, except during the winter, when navigation is obstructed by ice. The steam marine of the lakes has a greater tonnage than have the sailing craft, and many of the steamers are of the most approved type of naval architecture. The sailing vessels are mostly three-masted schooners. There is a vast traffic between Buffalo, at the western extremity of the Erie Canal, and the ports of Lake Erie, Huron, Michigan, and Superior, to Duluth, the eastern terminus of the Northern Pacific Railway. The cargoes consist mostly of coal and manufactured goods going west, and of iron, copper, grain, and lumber going east. Other important cities on the Great Lakes, named from east to west, are Oswego, Cleveland, Toledo, Detroit, Chicago, and Milwaukee. The larger part of the total shipping of the Great Lakes hails from Chicago, Detroit, Milwaukee, West Superior, Toledo, Cleveland, and Buffalo. The largest shipyards are those of Cleveland and

Bay City. The only other lake in the United States that has a large commerce is Lake Champlain. It forms part of the St. Lawrence drainage system, and has canal communication with the Hudson.

**Canals.**—The canals of the United States have a total length of about 4,000 miles. Those of Pennsylvania and Maryland are principally used for floating iron and coal to the cities of the coast, in exchange for general merchandise.

The *Erie Canal* connects the Hudson River with the Great Lakes. The voyage between Buffalo and New York, by way of the Erie Canal and Hudson River, occupies about a month.

The *St. Mary's Falls Canal* avoids the falls of St. Mary's River between Lakes Superior and Huron. This important gateway of trade is only one mile in length (see page 143).

Other busy canals are the *Champlain*, which connects the Hudson River with Lake Champlain, and thus with the St. Lawrence system; the *Raritan*, which connects the Delaware River with Raritan Bay; and the *Ohio*, which connects Lake Erie with the Ohio River. The *Welland Canal* is a Canadian work, which connects Lakes Erie and Ontario. It is made necessary by the rapids and the great fall of Niagara. Further east, several short canals avoid the rapids of the St. Lawrence, and, thus, the waters of the Great Lakes are commercially connected with the sea-board at the mouth of that river.

**Coast Trade.**—Three-fourths of the tonnage of the American merchant marine are employed in the coast-wise trade. Lines of steamers connect the great cities of the coast with one another. Such lines in particular carry passengers, and freight between New York City and the ports of Galveston, New Orleans, Charleston, Richmond, Boston, and Portland.

Most of the coast-wise freight, however, is transported in sailing vessels. Coal going to New England from Philadelphia and New York Harbour, and pine-timber going north from the Gulf and lower Atlantic ports, are leading items in this traffic. Cotton, however, comes to the north-eastern markets from Galveston, New Orleans, Savannah, and Charleston by steamer. The principal staples in the coasting trade of the Pacific States are—canned salmon, seal-pelts, gold, and whale-bone from Alaska; grain, lumber, and wool from Portland;

coal from Seattle; and canned salmon from Astoria—all of these going chiefly to San Francisco. Many cargoes of timber are shipped to the same point from the ports of Los Angeles and San Diego in the south.

**Railroads.**—A network of railroads is spread over the populous eastern half of the country, and great trans-continental lines connect the eastern roads with those of the Pacific States, making a total length of 266,000 miles.

These Trans-continental Railroads are four in number.

1. The Northern Pacific Railroad extends from *St. Paul*, *Minneapolis*, and *Duluth* at the head of Lake Superior, to *Portland* (Oregon), and *Puget Sound*.

2. The Great Northern Railroad extends from *Duluth*, *St. Paul*, and *Minneapolis* to *Seattle* and *Tacoma*, the Pacific ports.

3. The main line of the Southern Pacific Railroad extends from *New Orleans* (Louisiana) to *San Francisco*. The Central Pacific extends from *Ogden* (Utah) to *San Francisco*. The latter connects at *Ogden* with the Union Pacific running to *Omaha* and *Kansas City*, the chief commercial gateways of the Missouri River.

4. The Atchison system extends from *Chicago* and *St. Louis* to the Pacific coast, passing through the south-west and reaching, by means of dependent lines, all the important points in the State of Texas.

The principal Eastern Railroads are four in number.

1. The New York Central and Hudson River Railroad connects *New York City* with *Albany*, following the Hudson River, and extends through the Mohawk valley west to *Buffalo*. Thence, *via* the Lake Shore and Michigan Southern, it extends to *Cleveland*, *Toledo*, and *Chicago*. It also connects at *Buffalo* with the Michigan Central, running to *Detroit* and *Chicago*. These lines are known as the "Vanderbilt System."

2. The Pennsylvania Railroad connects *Philadelphia* with *Chicago*, *Cincinnati*, and *St. Louis* by way of *Pittsburg*, and all these cities with *New York*.

3. The New York, Lake Erie, and Western Railroad traverses the southern part of the State of New York, connecting the city of *New York* with *Buffalo*, and having a branch to *Cincinnati* and *St. Louis* called the Atlantic and Great Western.

4. The Baltimore and Ohio Railroad, running southward

and westward from *New York*, connects *Baltimore*, *Chicago*, *Cincinnati*, and *St. Louis*. The division to *Cincinnati* is called the *Cincinnati*, *Washington* and *Baltimore*, and that between *Cincinnati* and *St. Louis*, the *Ohio* and *South-Western*.

**Commerce.**—The United States ranks second among nations in the value of its foreign commerce, Great Britain being first, and France third.

Most of the exports are to Great Britain and her possessions, Germany, France, the Netherlands, Italy, Belgium, Spain, Mexico, Brazil and Japan.

Most of the imports are from Great Britain, Germany, France, Brazil, Japan, Italy, India, Mexico, China, Switzerland, the Netherlands, Dutch East Indies, Argentina, and Austria-Hungary.

Our trade with the United States is of the most satisfactory kind to that country, as nearly all our imports from that country are of native growth or manufacture, and the United Kingdom is her best customer, taking one-third of the total exports.

The chief exports from the United States to the United Kingdom, with their value in millions of pounds, were:—

	Millions £		Millions £
Wheat .. ..	49	Leather .. ..	4½
Flour .. ..	10	Machinery .. ..	8
Maize .. ..	8	Copper Goods .. ..	10½
Cotton .. ..	77	Petroleum and Products	4
Cattle and Beef .. ..	13	Tobacco .. ..	4½
Bacon and Ham .. ..	28	Wood and Manufactures	5½
Lard .. ..	8		

The total value of these is over 250 millions sterling.

The principal imports from the United Kingdom to the United States, with their values in millions of pounds, were:—

	Millions £		Millions £
Iron .. ..	2½	Linen Goods .. ..	4½
Cotton Goods .. ..	7½	Woolen Goods .. ..	2

Total imports into the United States, about thirty-four millions.

**Commercial Centres.**—*New York*, the great commercial centre of the United States, is second only to *London* among

the great cities of the world in population, wealth, and enterprise, its estimated population being over seven millions. Its geographical position and its fine harbour combine to make it the commercial metropolis of the Western Continent. In amount of commerce, it is surpassed only by London, Hamburg and Liverpool.

*Manhattan Island*, on which it is mainly situated, is long and narrow, and projects into a deep bay. This bay, and the adjoining waters, furnish nearly one hundred square miles of anchorage; while the shores of the island have twenty-five miles of water-front, all of which furnishes good wharfage area. The adjacent shores supply as much more.

New York has gradually and steadily absorbed the bulk of the foreign commerce of the Union. Direct communication is now held with all the large commercial centres of the world by steam-ships and sailing-vessels. This port does more than half of the foreign commerce of the country; and four trunk lines of railway connect the city with the great producing regions and commercial centres of the west.

These lines are the New York Central; the New York, Lake Erie and Western; the Pennsylvania; and the Baltimore and Ohio. They bring the food and other products of the west to New York for export, and, in return, distribute throughout the west the manufactures of the Atlantic States and the wares imported. Even the cotton of the south seeks New York; and a fifth of the amount exported annually passes through this port.

New York is the centre from which most of the great financial transactions of the country emanate; and, as a money-market, it is second to London only. The manufacturing interests, in and around the city, are much greater than in any other part of the country. The more important industries are the making of *clothing, shoes, cigarettes, and cigars; sugar-refining, printing, and book-binding; brewing, leather-working, and iron and steel-working*. Some of the best ships built in the country are launched here.

At the western end of Long Island is *Brooklyn*, now a part of New York, to the main body of which it is connected by the finest suspension bridge in the world. The manufacturing interests of Brooklyn are very great, but it is also a city of homes for New York business men. It has a great



extent of wharfage, and a considerable portion of the commerce of the port of New York is done through Brooklyn.

Jersey City, opposite New York on the west, is a suburb of industries and homes. Its water-front is extensive; and, as numerous western railways terminate at its piers, a considerable direct foreign commerce is carried on. Within a radius of twenty miles of the City of New York is a population of about four millions, all dependent to a greater or less degree upon the city.

Boston, the capital of Massachusetts, is the second American seaport in commercial importance. About nine per cent. of the commerce of the country passes through this port. Much of the export and import trade of New England is carried on through Boston, and it also receives for export a large amount of food-products from the west. These products reach Boston largely by way of the New York Central and the Boston and Albany railroads.

The harbour of Boston is one of the best in the country, but its anchorage area is little more than half as great as that of New York. The Boston and Albany, and other railway lines, connect this port with the great trunk lines of the west, while numerous other lines communicate with all parts of New England. No other part of the country does so much manufacturing as New England; and Boston is the city upon which nearly all these industries depend, both for banking facilities and for a market.

Boston is a great financial centre. It is also the chief educational centre of the country. The industries of Boston are chiefly the manufacture of *boots and shoes, clothing, and iron and steel goods, and printing and book-binding, brewing, and sugar-refining*. It is the first *leather* market and the second *wool* market of the United States.

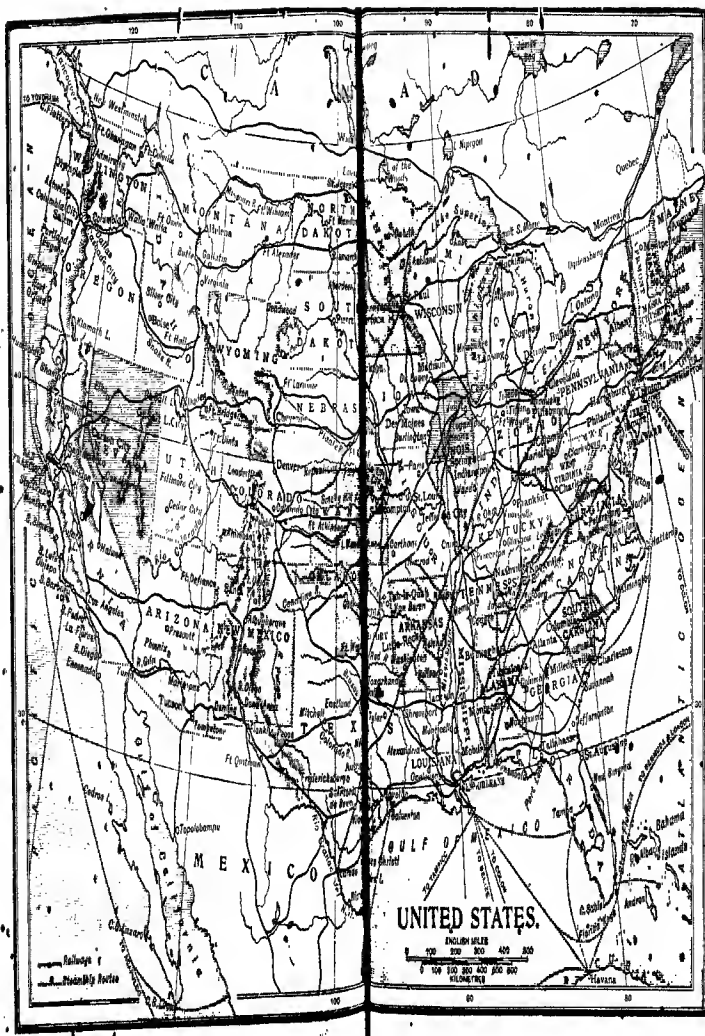
New Orleans is advantageously situated on the Mississippi River, one hundred miles from its mouth. The channel at the mouth of the Mississippi River has been deepened to thirty feet. This has been done by building walls in front of the banks so as to narrow the channel. The effect of this is to increase the rate of current, which automatically deepens the river, so that ocean vessels of the greatest draught may now reach the city. These improvements have greatly increased the commercial importance of the port. About a

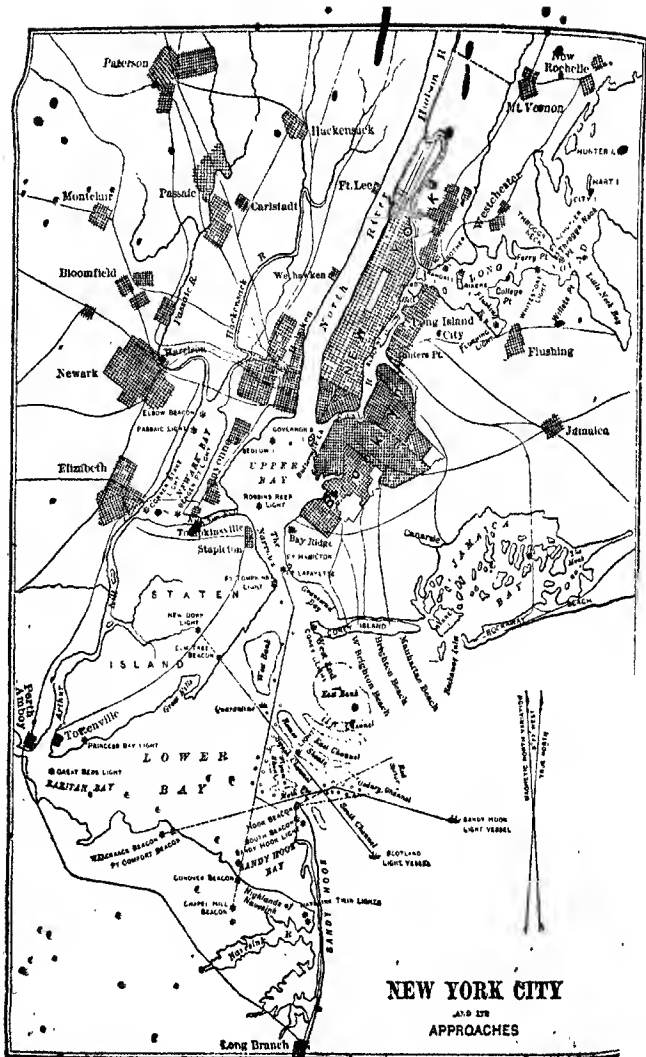
third of the cotton crop and nearly all of the cotton-seed oil are shipped from New Orleans. The railway connexions of the city have been improved during recent years, and have done much to aid its commercial development. The exports of New Orleans are ten times the value of its imports. Most of the *sugar-cane* raised in the United States is grown in Louisiana, and the raw sugar is sent to market through the port of New Orleans. *Rice*, another leading crop, finds its way to market by the same means. It has factories of various kinds; the leading manufactures of New Orleans being *tinware, clothing, boots and shoes, manufactures of wood, and railway cars.*

San Francisco is the eighth seaport in commercial importance in the United States, and is destined to become a great commercial centre. San Francisco Bay, together with San Pablo Bay, its northern extension, on which it is situated, forms one of the most beautiful harbours in the world, and furnishes anchorage ground several times as large as that of New York Harbour. The harbour itself and the Golden Gate (the strait connecting it with the ocean) admit vessels of the greatest draught at any time, regardless of tides. Nearly all the foreign commerce of the Pacific slope passes through San Francisco. Much of the trade is in imports; but of late years, *wheat and fruit* have become considerable exports. *Timber, wine, and meat products* are other exports. Nearly all the *quicksilver* exported goes through this port.

Lines of steamships connect the city with New York, the Pacific coast-ports of South America, Yokohama, Honolulu, Auckland, and the various Australian ports. It is connected by steamship lines with all the important coast towns, and by rail with the more important places of the interior. The building of trans-continental railways has greatly increased travel and trade between the Atlantic and Pacific sea-boards. Much of the coal used in California is imported from Washington, British Columbia, and Australia. But, in spite of the high cost of fuel, manufactures are extensive, especially those of *furniture, leather goods, clothing, cigars, iron and steel, and refined sugar.* Considerable *fishing* is carried on from this port, and, with New Bedford and Provincetown, on Cape Cod, it does most of the whaling of the world.







Philadelphia is fourth among the seaports of the United States. The city is situated on the Delaware River, one hundred miles from the Atlantic Ocean. The depth of the river at low tide is sufficient to admit large ocean steamships. The principal exports are *food products, coal, cotton, leather, tobacco, and petroleum*. The *petroleum* export of the United States is almost entirely from Philadelphia and New York.

The proximity of *coal* and *iron* mines largely accounts for the great industrial development of Philadelphia and its vicinity, where manufacturing interests greatly exceed shipping interests in value. *Iron* and *steel-working* is very extensively followed, but it is for its *woollen* industries that the city is especially noted. It is the greatest *carpet* manufacturing centre in the world; and in making velvet, Brussels, and other fine kinds of carpets, the city is not excelled. *Woollen cloth, worsted, yarn*, and other *wool* materials are also extensively manufactured. The manufacture of pressed and other ornamental *bricks* and *terra-cotta ware* is a great industry, and one for which Philadelphia is famous. Among other leading manufactures are those of *drugs* and *chemicals, sugar, hats, and cotton goods*. Philadelphia has a population of over a million. The city is well provided with railway facilities, and its prosperity has been largely due to a system of canals which connect it with the coal and iron regions, and with New York and Baltimore. In the vicinity of Philadelphia, along the shores of the Delaware River, are the largest and most important ship-building yards in the United States. Among the vessels built in these yards are the swift steamships plying between San Francisco and Australia. The vessels for the new navy of the United States constructed here have few, if any, superiors in the navies of other nations.

Baltimore has a commerce slightly smaller than that of Philadelphia. Its exports are a third greater than those of the latter city. In exports, Baltimore ranks fifth, New York being first, Washington second, and New Orleans third. Its imports are but a fraction of the exports, and little greater in value than those of New Orleans. The city is situated near the head of Chesapeake Bay, one hundred and eighty miles from the Atlantic. It owes much of its growth, however, to railway connections with the west rather than to its maritime position. The harbour is naturally a fine one, but it has not

the capacity found at other leading ports. Baltimore is the greatest *oyster-market* in the world, and one of the most important industries of the city is that of gathering, canning, and shipping *oysters* to all parts of the world. The city is also a considerable *tobacco market*. Among the leading industries are *iron* and *steel-working*, and *brick-making*.

These six ports, New York, Washington, New Orleans, Philadelphia, Baltimore, and Boston, do about eighty-nine per cent. of the importing, and seventy-nine per cent. of the exporting; that is, eighty-four per cent. of the total foreign commerce of the United States.

**Lake Ports.**—Oswego, the most important city of the United States on Lake Ontario, carries on a considerable trade with Canada. The largest *starch* factory in the world is situated here.

Buffalo, at the foot of Lake Erie, is an important railway centre. *Coal* and the manufactured products of the East are shipped from this port to the West and into Canada. It is the lake terminus of the Erie Canal.

Cleveland, situated on the southern shore of Lake Erie, has a valuable shipping trade in *grain*, *iron ore*, and *manufactured products*. Its *manufactures* are very important, and include *iron* and *steel wares*, *furniture*, and *farming implements*. There are also a number of large *petroleum* refineries. The Ohio canal affords an outlet to the Ohio River, and thence to the Mississippi.

Detroit, on the Detroit River, between Lakes Huron and Erie, is the most important port between Buffalo and Chicago.

Chicago, situated near the southern extremity of Lake Michigan, is the most important port on the Great Lakes, and the second in population on the American continent. The harbour, naturally poor, has been greatly improved by artificial basins and sea-walls. Chicago is the greatest railway centre in the world. About thirty lines make the city their terminus. It is the greatest food centre in the world, and a large proportion of the products of the States west of this point find their market here.

Milwaukee manufactures *flour*, *beer* and *leather*, and has a large trade in *grain* and *timber*.

**River Ports.**—Owing to the facilities for transportation

furnished by the river, and to the railway connections with other great centres of trade, numerous large cities have grown up along the Mississippi River and its tributaries.

Vicksburg, on the lower Mississippi, is the centre for the output of many *cotton-seed oil mills*.

Memphis is one of the most important *cotton markets* of the interior.

St. Louis, on the Mississippi River, just below the junction of the Missouri, is the great commercial centre of the Mississippi valley. The population of the city is over half a million. It is a great market for *grain, flour, animals and animal products, tobacco, cotton, cotton-seed oil, and sugar*.

St. Paul is situated at the head of the navigation on the Mississippi River, and is an important centre.

Minneapolis, adjoining St. Paul on the west, is the greatest flour-producing centre in the world.

Kansas City is on the Missouri River. It has a small river traffic, and its development is mainly due to its great railway facilities.

Omaha has a considerable river traffic, and is a railway centre of much importance. In the city are large manufactures of railway supplies. *Smelting and metal-working* are leading industries.

Louisville, on the Ohio River, is the greatest *tobacco-market* in the world. *Pork-packing* and the manufacture of *whisky and metal goods* are leading industries.

Cincinnati is the largest and most important city in the Ohio valley. An extensive traffic is carried on by the river; by the Miami canal which gives water connection with Lake Erie, and by the great trunk line which connects the city with all the leading commercial points.

Pittsburg and Alleghany City are situated on the Alleghany and Monongahela rivers, where they unite to form the Ohio. The first growth of Pittsburg was due to its favourable position for traffic by water; but the later development of the coal and iron mines of Pennsylvania has made the city, next to Chicago, the principal *iron and steel-producing* centre of the country. *Glass-making* is the second industry, and in this product Pittsburg stands first in the country.

The Territory of Alaska.—The territory of Alaska has an area of over half a million square miles, the greater part of



which lies either within or adjacent to the arctic circle. West of the coast range of mountains the climate is moderate, being modified by the Japan current. The commercial importance of Alaska lies in its so-called fisheries. These include whaling, sealing, and sea-otter catching; salmon, cod, and halibut are also taken. The rivers that flow into the Pacific Ocean abound in fish, and the run of salmon in the spring is greater than that in the Columbia River. The canning of this fish is now an industry of great value.

In the southern part only are the resources of Alaska developed. The great cost of supplies and the difficulty of transportation hinder the prosecution of industrial enterprise. *Gold, silver, copper, tin, and coal* are mined, but under very unfavourable conditions. *Petroleum, gypsum, and marble* are found. The unworked deposits of *coal*, all of which is bituminous, are estimated to be sufficient to supply the United States for centuries. The forests of southern Alaska contain valuable woods, such as *spruce, fir, hemlock, and yellow cedar*. The capital is Juneau.

Cuba, acquired after the Spanish war, was constituted into a Republic, subject to certain limitations, in 1902.

Cuba, the largest island of the West Indies, is situated at the entrance to the Gulf of Mexico. In area it is about four-fifths that of England, and the population is 2,600,000. On the coast the climate is tropical, but the interior uplands are cooler. The soil is fertile. **Productions.**—There are large forests and extensive grass-lands, and about one-tenth of the land is cultivated. *Sugar, tobacco, coffee and tropical fruits* are grown, and immense herds of *cattle* are raised. *Gold, silver and copper* are mined. The chief industries are the *growing and manufacture of tobacco*.

The commerce is chiefly with the United States, Great Britain, and Spain.

Havana, the capital, has a population of 688,000.

Puerto Rico is an island less than Wales, population, 1,120,000. It produces *sugar, tobacco and coffee*. San Juan is the chief port.

**The Hawaiian Islands.**—These islands lie 2,100 miles southwest of San Francisco. Hawaii is the largest. Area, 6,405 square miles. Population, 251,000. The climate is temperate and equable, and the soil fertile and productive in parts.

**Productions.**—There are many large forests and extensive grassy plains on which large herds of sheep and cattle are raised. Sugar and rice are the staple products; coffee, bananas, cotton, tobacco, wheat and fruit are also cultivated. The exports are sugar, rice, bananas, hides and wool. The imports are manufactured goods and food-stuffs. The commerce is chiefly with the United States. Americans own nearly all the cultivated area.

Honolulu is the capital, with a population of 75,000. It is lighted by electricity, almost every family has a telephone, and it has a good system of street cars.

**The Philippine Islands.**—These islands are situated in the Pacific Ocean. With the Sulu Archipelago they have an area of about 114,400 square miles, and a population of 8,831,618. Luzon is the largest island; its area is about 41,000 square miles. The next in importance are Mindanao, Samar, Palawan, and Negros.

The islands are very mountainous, one of the summits reaching 10,300 feet, and are covered to the tops with enormous trees. Volcanic eruptions and earthquakes are common and destructive. Water is everywhere abundant in streams and lakes. The climate is tropical—hot and humid, but salubrious. Violent hurricanes occur on the coast. **Productions.**—The soil is extremely fertile. There are rich forests of cedar, ebony, teak, ironwood, gum-trees and sapan wood. The bread-fruit, cocoa-nut, citron, tamarind, orange and mango grow in profusion, while tobacco, cotton, Manila hemp, coffee, sugar, rice, indigo, wheat, spices and maize are also cultivated. Different varieties of fish are very plentiful, and game—deer, wild boar, etc.—is abundant. Stock of all kinds is extensively reared. Coal and iron are present in large quantities, and gold, quicksilver, copper, sulphur and marble also exist. Amber, tortoise-shell, coral and mother of pearl are found. The exports are timber, hemp, tobacco, cigars, coffee, sugar, indigo, gum-mastic and some mineral produce. The imports are principally manufactured goods, petroleum, coal, wines, flour and Chinese silks.

Including the Ladrone Islands, the imports from the United Kingdom reach nearly one million, and the exports to the United Kingdom over three millions.

Manila, in the south-west of Luzon, on Manila Bay, is the

capital. It is well laid out, has fine, wide streets and good public squares, ornamented with fountains, etc. The shipping trade is large, and it has a world-wide fame for the manufacture of cigars. Fabrics are manufactured from hemp, and from the fibres of the pine-apple. Population, 267,000. \*

## CHAPTER XXI.

### MEXICO AND THE REPUBLICS OF CENTRAL AMERICA.

**The Republic of Mexico.**—The area of Mexico, 767,198 square miles, is about six times as great as that of the United Kingdom, and the population is 15,500,000. The population is densest in the southern part of the country, where, owing to the higher altitude of the land, the climate is cool. Three-fourths of the people are of mixed or Indian blood.

The great wealth of Mexico has hitherto consisted in her mines of *silver, gold, and copper*. It is estimated that the *silver-mines* have furnished more than half the world's supply of that metal. During recent years the industry of the country has drifted from *mining* to *oil* and *agriculture*. *Cereals* are the chief field products of the highlands; in the lowlands *hemp, sugar, coffee, cotton, and tobacco*, are the staple crops. The forest-products are *mahogany, dye-woods, gums, and spices*. Within recent years, the rearing of *cattle, horses, and sheep* has become a great industry in the north.

As with other Spanish-American countries, the business of Mexico is largely in the hands of foreigners. Commerce is developing very rapidly, and the United States is the chief selling market, taking three-fourths of all Mexican exports, except those of the *precious metals*. The *precious metals* constitute two-thirds of the total value of exports. Apart from these, it may be generally said that Mexico sells *mahogany, dye-woods, spices, coffee, hides, and hemp*; and buys *textile fabrics, articles of iron and steel, and leather goods*. A large share of the goods imported by Mexico come from France.

*Vera Cruz* and *Matamoros* are the chief ports on the Gulf coast. The harbour of *Vera Cruz* is not very good, though it is the port of the city of Mexico. *Mexico City*, one of the largest and finest among the capitals of the Spanish-American Republics, is a busy commercial centre, being at the heart of the railway system of the country.

**Central America.**—Central America, the southern extremity

of North America, comprises the six Republics of Guatemala, Honduras, Salvador, Nicaragua, Costa Rica and Panama, and the British colony of Belize, or British Honduras. The inhabitants are mainly Indians and mixed races; but most of the whites are of Spanish descent. The greater part of the interior is a table-land. The Pacific coast is mountainous; the eastern coast marshy.

Guatemala is the northernmost of the republics. By far the most valuable product and export is *coffee*; *sugar*, *hides*, *indigo*, *rubber*, and *fruits* follow in order. San José, on the Pacific, and Puerto Barrios, on the Atlantic, are the chief ports, and are joined by rail through the capital. Guatemala, completely destroyed by an earthquake shock in 1917, was the capital. The total population of the republic is about 2,000,000.

Honduras is centrally situated with respect to the other states. The exports consist chiefly of *fruits*, *cattle*, *mahogany*, *hides*, *rubber*, *coffee*, and *sugar*. The mineral wealth of the country is but little developed. There is a short strip of coast-line on the Pacific, but the greater part of the republic stretches along the Caribbean Sea, for a distance of 400 miles. Tegucigalpa is the capital and largest city. The total population of the republic is about 613,000.

Salvador is the only central American state having no Caribbean coast. The people are engaged in agriculture and mining. *Indigo*, *coffee*, *sugar*, *balsam*, and *silver* are exported. The total population is about 1,250,000. The old capital, San Salvador, surrounded by volcanoes, has been abandoned for another site called *New San Salvador*. Though the smallest but one of the six central American republics, Salvador is second in population.

Nicaragua is the largest in area of these republics, and has an extensive sea-coast on both east and west. The central part of the country is a great fertile plain. Many rivers flow to the sea from this plain, but the San Juan is the only one that is navigable. Much of the public income is derived from the monopoly of the exports of *tobacco* and *gunpowder*. *Cattle-raising* and the collecting of *rubber* are the chief occupations of the people. There are few exports, that of *coffee* being the most important. Greytown, on the east coast, and San Juan, on the west coast, are the chief seaports. Leon, the former capital, and the largest city, is situated on the Pacific.

Managua, the present capital, is situated upon the lake of the same name. The total population of Nicaragua is about 600,000.

Costa Rica is about two-thirds the size of Ireland. Its most valuable product is *coffee*. Exports of *fruits* and *tobacco* are increasing yearly. *San José* is the capital. The total population of Costa Rica is 420,179.

**Panama.**—Formerly a department of Colombia, Panama has existed as a separate republic since November, 1903. Its area is 32,380 square miles, and it has a population of 401,000. **Panama** is the chief town and the Pacific terminus of the isthmian railway; **Colon**, or *Aspinwall*, is the Atlantic terminus. The prosperity of the republic largely depends on the transit trade between these two ports. *Gold, hides, rubber, shells, cabinet woods* and *bananas* are exported in return for *manufactured goods* and *food-stuffs*.

Across the narrow isthmus of Panama a lock canal has been constructed by the United States, for which purpose a belt of country, five miles wide on each side of the route, was ceded to them. The canal is fifty miles long, and its minimum depth 41 feet; the Atlantic port is Colon, the Pacific, Panama. The least width is in Culebra Cut and the greatest in Gatun Lake. The three chief parts of the canal are the lake formed by damming the Chagres River, and the two channels leading to this lake from the Pacific and Atlantic Oceans; the surface of the lake in question is 85 feet above sea-level. A small steamer, the *Louise*, passed through the canal from the Atlantic to the Pacific on November 17, 1913, and the canal was made available for commercial shipping on August 15, 1914. During 1915 there were continual interruptions of traffic owing to landslides, and the canal was closed until April, 1916.

**The Island of Haiti.**—This island, which is inhabited mainly by negroes, is divided into the *Dominican Republic* in the eastern and that of *Haiti* in the western part. The island has about the same area as Ireland, and a population of about 2,250,000. The exports are chiefly *tropical woods, coffee, cotton, sugar, and cocoa*.

*Port-au-Prince*, the capital of Haiti, has a population of 105,000; that of *Santo Domingo*, the capital of the Dominican Republic, is about 22,000.

## CHAPTER XXII.

### SOUTH AMERICA GENERALLY.

**Position.**—United to North America by the narrow Isthmus of Panama, which is little more than eighteen miles across, South America, like Africa, stretches away into the Southern Hemisphere, bulking broadly beneath the equator, but gradually tapering till it terminates in the bold rocky promontory of Cape Horn. It has an estimated area of nearly seven million square miles, fully two-thirds of which are situated within the tropics. Like Africa, its triangular outline is little broken by gulfs or bays; but it has a gigantic river system whose estuaries and channels afford the means of communication with its remotest interior. All its better portions are thus fairly accessible—the only barrier being the lofty ridge of the Andes (practicable only at a few narrow passes), which separate the eastern plain from the western sea-board.

**Physical Features.**—In physical aspect the continent possesses the following regions :—

The low-terraced belt of country skirting the shores of the Pacific, from 50 to 100 miles in breadth and 4,000 in length, of which the two extremes are fertile, and the middle sandy, arid, and dotted with salinas.

The basin of the Orinoco, enclosed on the north by the eastern curve of the Andes and on the south by the highlands of Guiana. It consists of extensive plains, called *llanos*, either destitute of wood or merely dotted with trees, but covered during part of the year (the rainy season) with luxuriant herbage.

The basin of the Amazon, a vast plain, embracing a surface of more than two million square miles, intersected by numerous tributary rivers, possessing a rich soil and humid climate, almost entirely covered with dense forests (*selvas*) and impenetrable jungle. After heavier rains than usual the whole is practically converted into a shallow inland sea.

The great valley of the Plata, occupied chiefly by open

plains called *Pampas*, in some parts toward the Andes barren and shingly, but, in general, clothed with weeds, thistle, and tall grasses, on which feed enormous herds of wild horses and cattle.

The high country of *Brazil*, eastward of the *Paraguay* and *Uruguay*; presenting alternate ridges and valleys, covered with timber towards the Atlantic, but opening into grass-lands in the interior.

The sterile region of *Patagonia*, rising by successive stages from the Atlantic—the soil shingly and strewn with boulders, the grass stunted, and the climate cold and tempestuous.

And, lastly, the *Andean Belt*, stretching from South to North, consisting of mountain-ridges covered with snow and volcanic ejections, of intervening gorges and occasional table-lands, whose elevations confer on their tropical position the climates of temperate regions.

**Geology.**—Though observations have been made at numerous detached points, the geological structure of this continent is yet imperfectly known. The Andes, as well as the Brazilian and Colombian sierras, are rich in metalliferous veins and precious minerals. *Gold*, for example, is found in New Grenada, Brazil, Guiana, Chile, Peru, and Bolivia; *silver* in Peru, Bolivia, Chile, and La Plata; *tin* and *quicksilver* in Peru; *copper*, *lead*, *antimony*, *iron*, etc., in various districts; *coal* in Brazil, Chile, and Panama; *salt* in Grenada and La Plata; *nitrates of soda* and *potash* in the salinas of La Plata and Peru; *diamonds* in Brazil, *emeralds* and other precious stones in most of the higher ranges.

**Climate.**—With the exception of *Tierra del Fuego* and *Patagonia*, which are chilled by the cold currents from the Antarctic Ocean, and the plain of La Plata, which, towards the Atlantic, enjoys a genial and temperate climate, the great bulk of South America is situated within the tropics.

**Flora.**—In no other region is the true tropical forest seen in such perfection, in none is rapidity of growth so remarkable, and in none is there such a development of verdure and foliage. In *Paraguay* is grown the *maté* or *Paraguay-tea tree*; and in the more tropical portions are cultivated the *cinchonas*, *sugar-cane*, *cocoa*, *coffee*, *tapioca*, *rubber*, *arrowroot*, *tobacco*, *cotton*, *indigo*, and a thousand luscious fruits; while in *Chili*, "the Italy of South America," the *vine* and *olive* are grown.



## CHAPTER XXIII.

### THE STATES OF SOUTH AMERICA.

**Colombia.**—The republic of Colombia is situated at the north-western extremity of South America. Its area is nearly 482,329 square miles; the population is estimated at 5,475,000. Much of the surface is mountainous; but, in the east, and on the north, are extensive plains.

**Agriculture** is the chief industry. The principal products are *tobacco, cocoa, coffee, plantains, bananas, wheat*, and other *cereals, vegetable ivory, and indigo*. *Cattle and horses* are reared on the plains, and large quantities of *hides and jerked beef* are produced. The forests are extensive. Among the trees are *mahogany and cedar, fustic* and other *dye-woods*, and *medicinal plants*. The mineral productions are *gold, silver, platinum, copper, iron, lead, mercury, salt, petroleum, and coal*.

The chief exports are *cinchona, coffee, tobacco, nitre, silver ore, cocoa, cotton, dye-stuffs, hides and rubber*. The chief imports are *clothing and food-stuffs*. The principal means of communication between the interior and the sea is the navigable Magdalena River.

**Bogota**, the capital, is situated on a lofty plateau, and is consequently healthful, though but a few hundred miles distant from the equator.

**Venezuela.**—The greater part of this republic lies in the basin of the Orinoco River. The area is nearly four hundred thousand square miles; the population is two millions and a quarter. Inland, and beyond the reach of commerce, are great forests, extensive grazing areas, and a very fertile agricultural country.

**Agriculture** employs one-fifth of the population, and *cattle-raising* is extensively carried on upon the llanos of the Orinoco. The gold-fields, though not yet very productive, are among the richest in the world. *Coal, iron, copper, asphalt, petroleum, silver, tin, and salt* abound.

The exports of greatest consequence are *coffee, cocoa, rubber, and hides*. Other items are *cattle, gold, dye-woods, and timber*.

The United States buy of Venezuela principally *coffee*, and sell to her in exchange *cotton goods* and manufactures of *iron*, and *steel*. Most of the trade is with the United States, the United Kingdom and France.

*Caracas*, the capital, is the principal *cocoa-market*. *Valencia* exports *coffee*. *Maracaibo* is the chief seaport.

**Brazil.**—Brazil extends over nearly half the continent of South America. It is bounded on the north-east and east by the Atlantic Ocean, while its land boundaries touch upon every other country of South America except Chile. The extent of its coast-line is nearly 4,000 miles.

The area of Brazil is nearly as great as that of the United States, and its population is over twenty-four millions. The part of the country which can be said to be peopled comprises less than half the total area, and is for the most part included in the states bordering on the Atlantic.

Portuguese is the language of the people of Brazil. In all the other South American republics Spanish is spoken.

Situated for the most part in the torrid zone, Brazil has generally a tropical climate. In the vast lowland plain of the north, comprising the basin of the Amazon, and lying near the equator, the heat is very great. In the southern part the land rises rapidly towards the interior, leaving only a narrow plain along the coast. Owing to its elevation, the temperature of this highland is considerably lower than that of the northern plain. In the higher lands the products are those of the temperate zone. Along the coasts, and in the river valleys, the vegetation is tropical.

Vast areas of the interior are covered by dense forests, which supply valuable woods of various kinds. Among the best known timber trees are *rose-wood* and *satin-wood*; *shell-wood*, from which beautiful articles of imitation shell are made; a number of trees yielding *rubber*; and *Brazil-wood* and *fustic*, from which red and yellow dyes are obtained. Besides these, numerous medicinal plants, including *sarsaparilla* and *ipecacuanha*, are found in Brazil, especially in the basin of the Amazon.

Among the agricultural products, by far the most important is *coffee*. Brazil produces and exports more coffee than all the rest of the world together. Half the total quantity exported goes to the United States. Next to coffee, the most

valuable field products of Brazil are *sugar*, *tobacco* and *cotton*. The *cereals* and *vegetables* of the temperate zones are successfully cultivated. The cultivation of *rice* is extending, and much *cocoa* is grown.

*Mandioca*, or manioc, is one of the characteristic products of Brazil. It is the plant from which *tapioca* is obtained. Large quantities are exported, and it forms the principal farinaceous food of the people under the name of *farina*.

The **mineral** resources of Brazil are very great, but, with the exception of *gold* and *diamonds*, they have been very little developed. Besides *gold* and *diamonds*, Brazil has deposits of *silver*, *lead*, and *graphite*, as well as mountain masses of *iron*. In the state of Goyaz are enormous ore-beds. There are also strata of Brazilian "pebbles," from which lenses are made; *coal*, *marble*, and beds of *kaolin*.

Immense numbers of *horses*, *cattle*, and *sheep* are raised in Brazil. In the southern states vast herds of horses and oxen roam at large over the great plains. The oxen are taken with the lasso and are valued mostly for their hides, which are exported in great quantities.

**Manufactures** have made but little progress in Brazil. *Woollen fabrics* of good quality, including fine *cashmeres* and *merinos*, are made in the southern state of Rio Grande do Sul. In this state there are also *ironworks* and *sugar refineries*, besides *tanneries*, *breweries*, and *distilleries*. In the states of Minas Geraes and São Paulo *cotton goods* are manufactured, the machinery being imported from the United States and Europe. At Rio de Janeiro there are *cotton* and *silk* factories.

Brazil has about 17,290 miles of railway, partly owned and partly guaranteed by the government. Nearly all the lines connect seaports with inland navigable rivers. The railway system is best developed in the southern coast states, particularly in the great coffee state of São Paulo.

The area drained by the Amazon in its course from the Andes to the Atlantic is not less than 2,500,000 square miles in extent. With its numerous affluents, the Amazon affords navigation for large vessels for thousands of miles. In the east and south two other great rivers, the São Francisco and the Parana, with their many tributaries, supply another great system of navigable water-ways.

The foreign commerce of Brazil is mainly with Great Britain,

the United States, France, and Argentina. The leading exports are *coffee, rubber, maize, cocoa, and leather*. The imports, chiefly manufactured articles, are *cotton goods, wines and spirits, preserved meats and fish, woollen goods, iron and steel goods, coal*, and manufactures of *leather*. Most of the food-stuffs are imported from the Argentine and Uruguayan Republics; and most of the cotton goods and iron and steel manufactures, from England. The annual value of the exports from Brazil to the United Kingdom is about eleven and a quarter millions. Brazil imports from the United Kingdom products to the value of £6,000,000, great items being *textiles and fuel*.

**Rio de Janeiro**, the capital of Brazil, situated on the Atlantic coast, is the principal seaport of the republic. It has an excellent harbour, and a great shipping trade. More than half the coffee exported from Brazil is shipped here, for which reason it is commonly spoken of as "Rio" coffee. The city contains 976,000 people.

**Pernambuco** (or *Recife*, Portuguese for "the Reef"), a seaport at the most eastern point of the Atlantic coast, exports large quantities of *sugar and cotton*. Pernambuco has submarine cable communication with Lisbon.

**Bahia**, in the coast state of the same name, is the third city in population, and an important seaport. It has an extensive export trade in the chief products of the state, which are *sugar, tobacco, cotton, coffee, cocoa, and fruits*.

**Para** (or *Belem*), the most important seaport of the north, is situated on one of the mouths of the great river Amazon. It has a very great shipping commerce with the United States and Europe. *Rubber* is the principal export. Other exports are *cocoa, Brazil-nuts, vanilla, cabinet woods, skins, and feathers*.

**Santos**, the port of São Paulo, is an important coffee port.

**Manaos**, on the Amazon, is a *rubber collecting* centre. Steamers ply between here and Para. British ships do a great part of the carrying trade to and from Brazil. There are three lines of English steamers, one German line, and one American line, trading to Brazilian ports.

Chile extends along the west coast of South America from Peru to Cape Horn, and is walled in on the east by the great chain of the Andes. Its area is six times that of England. The population is nearly four millions.

Northern Chile has a desert-like surface, and would be of little value but for the deposits of *guano* and *nitre*, and for its mines of *gold*, *silver*, and *copper* in the mountainous regions. The *nitre* deposits consist chiefly of *sodium nitrate*, only a small quantity of *potassium nitrate* being found. These deposits are commercially spoken of as "nitrates." The *nitrates* form the most important article of export to the United Kingdom. The middle part of the republic is the most populous, and is the agricultural section; the southern part is sparsely inhabited, and covered with dense forests. The north is rich in *nitre* and *guano*, the centre in *copper* and *silver*, and the south in *iron* and *coal*.

The chief articles of export are *nitrates*, *copper*, and *wheat*. The leading imports consist of *cotton* and *woollen manufactures*, *coal* and *machinery*. The United Kingdom buys *nitrates*, *ore* and *wool*; and, in exchange, sells *cotton* and *woollen goods*, *ironwork* and *machinery*, and *coal*.

Santiago is the capital, and Valparaiso is its port. Iquique, farther north, is the port from which most of the nitrates are exported.

Antofagasta, almost on the tropic, is the port of Bolivia, with which it is connected by rail.

There are nearly six thousand miles of railway. The Transandine line now reaches Argentina by the Uspallata Pass and another Trans-Andean line is under construction further south.

**Uruguay.**—Uruguay, south of Brazil, and the east of the Argentine Republic, is the smallest of the South American republics. The area is 72,210 square miles. The population is over one million and a quarter.

This republic is fortunately situated for commerce, having more than 600 miles of water front on the Atlantic coast, and on the Uruguay and Plate rivers. The surface is a vast grassy plain, diversified by low swells of land in the interior. The country is well watered, and the climate is not unlike that of southern France. *Fruits* and *vegetables* are grown in great abundance and variety. The chief wealth of the country, however, centres in the grazing interests; and the exports of *veef*, *hides*, *meat extracts*, and *wool* are of great importance. The forests yield a plentiful supply of useful *timber*.

Trade is carried on mainly with Great Britain and France.





The principal manufacture for export is *beef* and *extract of meat*. The leading imports are *liquors*, and *manufactured goods* in great variety. We buy of Uruguay *hides*, *wool*, and *hair*, and sell in exchange *manufactured products*.

Montevideo, the capital and largest city, is situated upon a tongue of land which is washed on one side by the Atlantic, and on the other by the River Plate; most of the trade of the republic passes through this port.

Ecuador.—Ecuador lies on the Pacific coast, between Colombia and Peru. The area is nearly five times that of England. The population is estimated at 1,323,000, more than half of it consisting of Indians. Agriculture is in a backward state. *Cocoa* is the staple product. *Coffee* is grown to a considerable extent, and *rubber plantations* are being made, as the wild plants have been exhausted. The minerals comprise *gold*, *sulphur*, *lead*, *iron*, *copper*, *emeralds*, and *petroleum*. Extensive forests afford *timber* suitable for ship-building and cabinet work. The manufacture of "Panama" hats is a leading industry.

The roads are very poor, even in the dry season; and, during the several wet months of the year, they are impassable. Freight and merchandise are transported by pack-animals. There are two short railways from the east to the interior.

Trade is carried on chiefly with Great Britain. *Cocoa* is the principal export; followed by *coffee* and *Panama hats*. In return Great Britain sends *cotton* and *woollen goods* and *hardware*.

Quito, the capital and largest city, is nearly on the equator, at an altitude of about ten thousand feet. Guayaquil is the principal seaport. Guayaquil is the only place of much importance, and most of the shipments of *cocoa*, *rubber*, *hides*, and *bark* pass through this port.

The Galapagos Islands, in the Pacific, are now important on account of their position with regard to the Panama Canal.

Peru.—Peru is situated on the Pacific coast, south of Ecuador, and west of Brazil and Bolivia. Its area is estimated at 722,461 square miles. The population is about 4,600,000, of which the great majority are Indians and half-breeds. Along the coast the country is low. The lands lying to the eastward of the Andes are very fertile, and will be opened to enterprise and trade by the completion of railways and



irrigation works now projected. The ocean cable has stations on the coast at Paita, Callao, and Lima. Peru is intersected by the head waters of the Amazon, which afford it communication with the Atlantic.

The chief exports are *sugar, gums, ores, cotton, wool*, both from the sheep and the alpaca goat and *guano*.

Lima is the capital, and chief centre of trade and wealth. It is connected with Callao, its seaport, by railway. Some of the largest and finest business houses in Lima are owned by Chinese merchants, who have the monopoly of trade in certain textile goods. A New York firm controls most of the foreign trade of the country.

**Paraguay.**—Paraguay lies between Brazil, Bolivia, and the Argentine Republic. From the latter place it is separated by the Paraguay and Parana Rivers. It is one of the smallest states of South America, and, like Bolivia, has no sea-coast.

The area is estimated at 107,000 square miles, and the population at about three-quarters of a million. The southern part of the country is low and swampy. A large part of the northern section is covered with forests, comprising a great variety of *timber*. The mineral resources are imperfectly known, but *iron* and *copper* have been found in several places.

Paraguay has every advantage that nature can afford, and needs only development to become of great commercial importance. Its pastures support vast herds of *cattle*, and *fruits* in great variety are grown. New regions are being opened by immigrants, and *sugar-culture* is growing in importance.

The *manioc root*, from which the *tapioca* of commerce is produced, is the staple diet of the people. This is to Paraguay and Brazil what rice is to China and Japan, and potatoes to Ireland. The principal export is the *yerba maté*, or Paraguay tea, made of *leaves* of the *ilex* tree, dried and reduced to powder. This *tea* is a mild stimulant, and is extensively consumed in other countries of South America. Paraguay *tobacco*, a poor article, and *hides* are other exports. About half the total imports of Paraguay are derived from Great Britain, and consist mainly of *machinery* and *clothing*.

Asunción, the capital, is situated on the Paraguay River. Villa Rica and Concepcion are other towns of importance.

**Bolivia.**—Bolivia is bordered north and east by Brazil,

south by the Argentine Republic and Paraguay, and west by Peru and Chile. It is, therefore, an inland country, its communication with the sea being carried on through the ports of Peru, Chile, and the Argentine Republic. Recent explorations in the upper waters of the Parana give reason to believe that Bolivia will soon be connected with the Atlantic by many tributaries of this river, which are navigable for steamboats of considerable draught. Bolivia embraces an area of 514,000 square miles. The population, about 2,520,000 in number, is chiefly of Indian descent.

The surface, a high plateau surmounted by lofty peaks of the Andes in the west, declines to a low, fertile plain, in the north and east.

Bolivia's products are mainly mineral, though there are several natural products from the forests. The *india-rubber* is of the finest quality, and almost inexhaustible. *Cocoa* is one of the most important products. The plant from which it is derived is raised in the valleys of the Andes, and exported to a considerable extent. The *cinchona-tree*, from the bark of which *quinine* is produced, was first discovered in Bolivia. Of late years it has been found in the forests along the entire chain of the Andes. Efforts have been made to transplant the *cinchona-tree* into Java, Ceylon, and India, and with such success, that the best quinine now comes from these countries. The result of the East Indian competition has been to reduce the price of quinine more than half.

Bolivia is very rich in minerals. With only the most primitive methods of mining, the *silver-mines* of Potosi are estimated to have produced £400,000,000 since their discovery. It is said that every ounce of ore that finds its way out of the Andes is carried on the back of a man or a llama, and the quartz is crushed by rolling logs upon it. By this method gold and silver to the amount of nearly £3,000,000 are annually mined. Besides the precious metals, copper, lead, tin, bismuth, salt, and sulphur are found.

As Bolivia has no coast its foreign trade is done through Mollendo, Arica, and Antofagasta, on the Pacific, and by the Madeira and Paraguay to the Atlantic. The old Argentine route is little used now. The exports comprise *silver, tin, rubber, gum, cocoa, coffee, Peruvian bark, copper*, and other

ores. *Silver* forms two-thirds of the value of the exports. Most of the trade is with the United States, the United Kingdom, and Germany. *Sucre* was formerly the capital, but *La Paz* is a much more important city, and is now the *actual* capital.

**The Argentine Republic.**—This Republic occupies the south-eastern portion of the continent of South America. The area is more than twenty times that of the United Kingdom; the population is estimated at 7,885,237. There is a large and rapidly increasing immigration, chiefly from Italy and Spain. The Republic is a pastoral country, in which sheep and cattle ranches cover a vast area.

Among the minerals known to exist are *silver, copper, gold, coal, salt, and sulphur*; but the output of these is as yet quite small. The coal-fields, though undeveloped, give promise not only of furnishing sufficient coal for home needs, but of providing an article of export to the neighbouring republics.

Buenos Aires is the largest railway centre in South America, lines radiating in all directions, while many more are under construction. The Trans-Andean line to Valparaiso saves a long and dangerous voyage of 2,000 miles round Cape Horn. Another line to Chile is under construction from Bahia Blanca.

After the absorption of Patagonia by Chile and the Argentine Republic, it was found that its supposed barren wastes are interspersed with fertile valleys, fine pastures, dense woods, and every requisite for the support of a large population. The chief articles of export are *wheat, maize, and linseed; meat and animals; hides and wool*. We buy of the Argentine Republic *wheat, maize, meat, linseed, and wool*; and in exchange sell manufactured goods in great variety. Thousands of tons of *jerked beef* are yearly shipped to Brazil and other neighbouring countries. The value of our imports from the Republic is £63,875,000 annually, and of our exports to it £17,500,000.

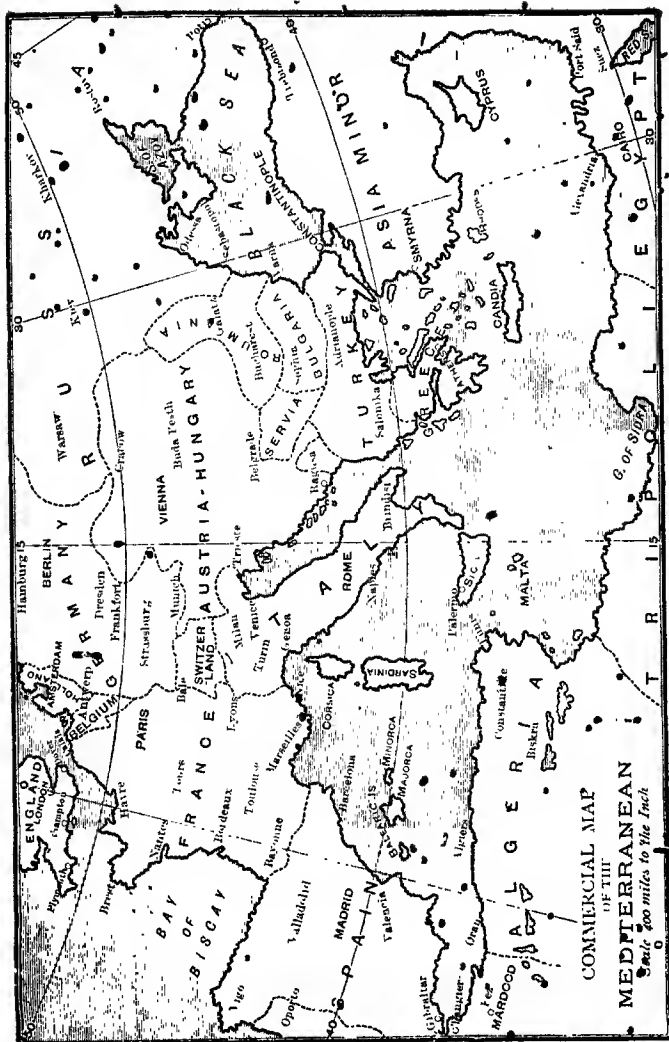
If any portion of the Western Hemisphere has a possibility of rivalling the United States in commercial energy, resources, progressiveness; and enlightenment, it is the Argentine Republic. It has many of the natural resources of the United States: great extent of plains, where wheat, maize and other grain can be raised far in excess of the home demand; almost

unlimited forest area of the choicest cabinet and building woods; and evidences of valuable deposits of minerals. The adjoining republic of Paraguay, which is a feeder and tributary to the Argentine Republic, has a large area that will produce sugar, cotton, rice, and other semi-tropical products in abundance.

Explorations have demonstrated the great value of the Patagonian accession in the south, both for raising grain and for grazing; while the further north the Republic pushes its frontier, settlers following close behind, the more fertile and productive the soil is found to be. The better part of the northern area can be reached by water-ways, and where these do not exist railways are being rapidly extended. Three-quarters of a million emigrants from Europe have settled in the Republic.

There are many small seaports, but two-thirds of the foreign trade of the country is done through Buenos Aires. This is the most energetic and progressive of the cities of South America. It is situated on the River Plate, about one hundred miles from its mouth, and the roadstead is an open one for the entire distance. Nearly opposite is Montevideo, in Uruguay, a city more advantageously situated, yet of much less commercial importance. By means of a submarine cable there is telephonic communication between the two places. More than twenty steamship lines connect Buenos Aires with important ports in Europe. The population in 1918 was about 1,637,000. The River Plate is formed by the junction of the Parana and the Uruguay Rivers, and the Parana River is often spoken of as the Plate throughout its course.







# INDEX.

	PAGE		PAGE		PAGE
Aberdeen ..	119	Angola ..	256	Australia (contd.) ..	
Acacia ..	34	Animal products ..	55	Commercial ..	
Accra ..	176	Antimony ..	17	products ..	153
Adelaide ..	157	Antwerp ..	235	Configuration ..	150
Aden ..	137	Apple ..	34	Geology ..	152
Adrianople ..	258	Araucaria ..	34	Lakes ..	151
Afghanistan ..	276	Archangel ..	231	Metals and	
Africa, British		Argentine		minerals ..	152
Empire in ..	174	Republic ..	312	Mountains ..	150
Agra ..	170	Arnatto ..	40	Political	
Aix-la-Chapelle	219	Arrowroot ..	34	divisions ..	153
Albany ..	158	Arsenic ..	17	Population ..	153
Alaska ..	295	Ascension ..	135	Products,	
Alberta ..	147	Ash ..	35	commercial ..	153
Alexandria ..	187	Ashton ..	119	Rivers ..	151
Algeria ..	208	Asia ..	264	Vegetation ..	152
Allahabad ..	170	British		Austrian Re-	
Alleghany City	295	Empire in ..	162	public, The	
Allspice ..	44	Central ..	264	German ..	253
Aloe ..	37	Climate ..	265	Canals ..	254
Aluminium ..	16	Eastern ..	264	Cities & towns	254
Amber ..	16	Fauna ..	266	Commerce ..	253
America,		Geological		Forests ..	253
Central ..	278	features ..	265	Industries ..	253
America, North	277	Northern ..	264	Manufactures	253
Climate ..	279	People ..	266	Minerals ..	253
Fauna ..	280	Physical		Position ..	253
Flora ..	279	features ..	264	Productions	253
Geology ..	278	Position ..	264	Railways ..	264
Great Central		Russian ..	264	Rivers ..	254
Plain ..	278	Southern ..	264	Soil ..	253
Great North-		Vegetable		Bacon ..	60
ern Plain ..	278	productions	266	Bahamas ..	134, 191
Pacific Region	277	Western ..	264	Bahia ..	307
Position ..	277	Asphalt ..	18	Ballarat ..	154
Structure ..	277	Aspinwall ..	301	Baltimore ..	293
Western ..		Assam ..	169	Baluchistan ..	276
Highlands ..	277	Assiniboia ..	140	Bamboo ..	35
America, South	302	Astrakhan ..	231	Bangkok ..	275
Climate ..	303	Asuncion ..	310	Barbadoes ..	134, 191
Flora ..	303	Athabasca ..	140	Barcelona ..	239
Geology ..	303	Athens ..	261	Barley ..	36
Physical		Auckland ..	161	Barmen ..	219
features ..	302	Azores ..	256	Basutoland ..	179
Position ..	302	Australia ..	150	Batavia ..	225
Amsterdam ..	224	Animal ..	152	Bathurst ..	175
Annam ..	210	Climate ..	151	Battens ..	35



	PAGE		PAGE		PAGE
Bechuanaland ..	179	British Borneo ..	172	Gaoutchoug ..	41
Beef, fresh ..	60	" Butma ..	170	Cape of Good ..	"
Belfast ..	117	" Columbia ..	147	Hope ..	177
Belgrade ..	262	" East Africa ..	184	Animals ..	177
Belgium ..	233	" Guiana ..	193	Area ..	177
Area ..	233	" Honduras ..	193	Climate ..	177
Canals ..	233	" New ..	193	Commerce ..	177
Cities, towns ..	235	Guinea ..	188	Great Karroo ..	177
Climate ..	233	British Posses-		Industries ..	177
Commerce ..	234	sions ..	133	Population ..	177
Configuration ..	233	Brussels ..	235	Productions ..	177
Fisheries ..	234	Bucharest ..	262	Railways ..	178
Foreign de-		Budapest ..	254	Rivers ..	177
pendencies ..	236	Buenos Aires ..	312	Surface ..	177
Industries ..	234	Buffalo ..	294	Towns ..	178
Population ..	233	Building stones ..	18	Vegetation ..	177
Position ..	233	Bulgaria ..	262	Cape Town ..	178
Productions ..	234	Burgundies ..	53	Cape Verde ..	
Railways ..	233	Burma ..	170	Islands ..	256
Soil ..	233	Bunley ..	119	Caracas ..	305
Benares ..	170	Burton-on-Trent ..	121	Cardiff ..	119
Bengal ..	169	Bury ..	119	Carpets ..	94
Berlin ..	215	Butter ..	55	Carthaginians ..	2
Bermudas ..	134	Cabinet-making ..	94	Cassava ..	35
Bern ..	251	Carliz ..	239	Castor oil plant ..	37
Beyrout ..	259	Cairo ..	187	Cawnpore ..	170
Birkenhead ..	115	Calais ..	207	Cayenne ..	210
Birmingham ..	116	Calcutta ..	169	Cedar ..	35
Blackburn ..	119	Callao ..	310	Central America ..	299
Blankets ..	93	Cambrian ..		Central Provinces ..	
Blantyre ..	186	Mountains ..	68	(India) ..	176
Bioemfontein ..	183	Camel's-hair ..	55	Cereals ..	35
Bolton ..	119	Camphor ..	35	Cetinje ..	262
Bombay ..	168	Canada, Domi-		Ceylon ..	171
Bones ..	55	nion of ..	139	Chalk ..	18, 71
Boots ..	93	Commerce ..	142	Champagne ..	53
Bordeaux ..	205	Fisheries ..	142	Charlottetown ..	144
Borneo ..	225	Lakes ..	140	Cheese ..	56, 94
Boston, U.S.A. ..	291	Merchant fleet ..	142	Cheesewood ..	37
Boulogne ..	207	Minerals ..	142	Chemnitz ..	218
Box tree ..	35	Population ..	141	Chicago ..	294
Bradford ..	118	Productions ..	141	Chile ..	307
Brazil ..	303	Provinces ..	139	China ..	272
Bremen ..	219	Provisional ..		Christiania ..	245
Breslau ..	217	Districts ..	140	Cider ..	95
Brest ..	207	Railways ..	143	Cincinnati ..	295
Breweries ..	93	Canadian-Pacific		Cinnamon ..	37
Bridgetown ..	192	Railway ..	143	Claret ..	53
Brisbane ..	156	Canary Islands ..	240	Clay ..	19
Bristol ..	118	Canton ..	274	Cleveland ..	294

	PAGE		PAGE		PAGE
Climate ..	12	Denmark (contd.)		England & Wales	
Clocks ..	95	Fisheries ..	241	(contd.)	
Cloves ..	42	Industries ..	241	Trawling ..	
Coal ..	19	Manufactures	242	ports ..	78
Cochin China	210	Position ..	241	Vegetable	
Cochineal ..	56, 240	Railways ..	242	productions ..	74
Cocoa ..	48	Depreciation	3	English ..	2
Cocoa-nut fibre	37	Derby ..	120	Esparto grass	46
Coffee ..	48	Devonian		Eucalyptus ..	41
Coir ..	37	System ..	68	Europe ..	195
Cologne ..	217	Diamonds ..	21	Arca ..	195
Colombia ..	304	Dieppe ..	208	Climate ..	200
Colon ..	301	Dogger Bank	77	Countries ..	200
Colonies, British,	139	Down ..	57	Geology ..	196
Columbia, British	147	Dresden ..	217	Lakes ..	199
Concepcion ..	310	Drugs ..	37	Mountains ..	195
Condiments ..	44	Dublin ..	117	Position ..	195
Constantinople	258	Dundee ..	119	Rivers ..	197
Cooperage ..	95	Dunedin ..	161	Surface ..	195
Copenhagen ..	242	Dusseldorf ..	218	Exchange ..	5
Copper ..	20	Dutch ..	2	Exports ..	7
.. smelting	95	Dyes ..	39	Falkland	
Cordovan ..	56	Ecuador ..	309	Islands ..	132
Cork ..	37, 120	Edinburgh ..	117	Feathers ..	57
Costa Rica ..	301	Eggs ..	56	Fibres ..	49
Cotton ..	95	Egypt ..	187	Fiji ..	188
Coventry ..	121	Elberfeld ..	218	Fisheries ..	57
Crefeld ..	219	England & Wales	67	Fiume ..	254
Croton plant ..	38	Cattle ..	76	Flax ..	50
Cuba ..	296	Climate ..	74	France ..	201
Cumbrian Group	68	Coalfields ..	69	Area ..	201
Cumino ..	137	Domestic ani-		Canals ..	201
Curaçao ..	225	mals ..	76	Cities and	
Currency ..	3	Farm crops	75	towns ..	204
.. United		Fisheries ..	77	Climate ..	202
States ..	5	Fruit trees ..	76	Commerce	204
Cutlery ..	97	Geological		Configuration	201
Cyprus ..	172	structure ..	68	Crops ..	202
Czechoslovakia	254	Horses ..	76	Domestic	
Damascus ..	259	Metals and		animals ..	202
Damask ..	98	minerals ..	71	Fisheries ..	204
Dantzic ..	219	Mountains ..	68	Foreign de-	
Deals ..	37	Oyster farming	79	pendencies	208
Decimal system	3	Pigs ..	77	Forests ..	203
Delhi ..	170	River fishes	78	Industries ..	203
Denmark ..	241	Rivers ..	68	Manufactures	203
Area ..	241	Sheep ..	77	Minerals ..	203
Canals ..	242	Shell fish ..	79	Population	201
Climate ..	241	Soil ..	73	Position ..	201
Commerce ..	242	Timber trees	75	Productions	202

	PAGE		PAGE		PAGE
France ( <i>contd.</i> )		Gold .. ..	22	Holland ( <i>contd.</i> )	
Railways ..	201	Coast ..	175	Foreign pos-	
Soil ..	202	Goolwin Sands ..	77	sessions ..	224
Wines ..	203	Gottenburg ..	246	Manufactures	222
Frankfort ..	217	Gozo ..	137	Productions	222
Fredericton ..	145	Grand Trunk		Railways ..	221
Freetown ..	175	Railway ..	143	Rivers ..	221
French Guiana	210	Granite ..	18, 83	Hones ..	24
Furs ..	58	Graphite ..	23	Honduras ..	300
Fustic ..	40	Great Karroo ..	177	Hong Kong ..	138
Gambia, the ..	174	Greece ..	260	Honiton ..	121
Gambier ..	40	Greeks ..	2	Honolulu ..	297
Gauze ..	98	Greenland ..	243	Hungarian Soviet	
General Steam		Greenock ..	121	Republic ..	253
Navigation		Grenada ..	193	Productions	253
Company's		Greymouth ..	161	Trade ..	253
Routes ..	124	Grindstones ..	24	Towns ..	254
Geneva ..	251	Guadaloupe ..	210	Hooks and eyes	99
Genoa ..	2, 249	Guatemala ..	390	Hops ..	41
Gentian ..	38	Guayaquil ..	309	Horns ..	59
Georgetown ..	194	Gum ..	40	Hosiery ..	98
German Repub-		trees ..	41	Hull ..	118
lic, The ..	211	Gutta-percha	41	Iceland ..	243
Area ..	211	Gypsum ..	24	Imports ..	7
Canals ..	212	Hague, The ..	224	India, ..	
Cities & towns	215	Hair, camel's	55	British Em-	
Climate ..	212	manufactures of	98	pire in ..	162
Commerce ..	214	Halifax, N.S.	125, 144	Boundaries	162
Configuration	211	Hamburg ..	216	Coast line ..	165
Foreign de-		Hamilton ..	146	Commerce ..	166
pendencies	219	Hams ..	58, 60	Configuration	163
Forests ..	214	Hanover ..	218	Exports ..	167
Manufactures	214	Hanseatic League	2	Extent ..	162
Minerals ..	213	Hardware ..	99	Himalayan	
Population	211	Havana ..	296	passes ..	164
Position ..	211	Havre, Le	206, 208	Himalayan	
Productions	213	Hawaii ..	296	Region ..	163
Railways ..	212	Haiti ..	301	Hindu Kush	164
Rivers ..	211	Hemp ..	50	Imports ..	167
Soil ..	212	Herat ..	276	Mineral wealth	166
Wines ..	213	Herding ..	61	Money of ..	4
Ghent ..	235	Hides ..	59	Northern river	
Gibraltar ..	136	Hobart ..	159	plains ..	164
Gin ..	98	Holland ..	221	Overland trade	167
Ginger ..	44	Canals ..	221	Productions	166
Gingham ..	98	Cities and		Provinces ..	168
Glasgow ..	114	towns ..	224	Railways ..	167
Glass ..	98	Commerce	223	Southern table-	
Gloves ..	98	Configuration	221	lands ..	165
Goa ..	256	Fishing ..	223	India-rubber	41

	PAGE		PAGE		PAGE
Indigo ..	89	Jute ..	50	Mace ..	45
Liquor ..	308	Kabul ..	276	Madagascar ..	208
Ireland ..	87	Kandahar ..	276	Madder ..	46
Bogs ..	88	Kansas City ..	295	Madeira ..	256
Climate ..	91	Karachi ..	169	Madras ..	168
Domestic ..		Kazan ..	231	Madrid ..	239
animals ..	92	Kharkov ..	231	Madura ..	225
Fisheries ..	92	Khartum ..	188	Magdeburg ..	217
Geological ..		Khelat ..	276	Maize ..	36
structure ..	90	Kidderminster ..	121	Malaga ..	239
Lakes ..	89	Kiev ..	230	Malta ..	136
Metals and ..		Kimberley ..	178	Manchester ..	116
minerals ..	90	Kioto ..	270	„ Ship Canal ..	116
Mountains ..	87	Kingston ..	192	Mandalay ..	171
Rivers ..	89	Königsberg ..	218	Manganese ..	27
Vegetable ..		Lac-dye ..	42	Manila hemp ..	50
productions ..	91	Lace ..	99	Manitoba ..	146
Wild animals ..	92	Lachrymæ ..		Maracaybo ..	305
Iron ..	24	Christi ..	53	Marble ..	18
„ manufacture ..	99	Lac resin ..	42	Margarine ..	55
„ smelting ..		La Paz ..	312	Marsala ..	53
districts ..	99	Latitude ..	12	Marseilles ..	205
Isinglass ..	59	Launceston, Tas. ..	159	Martinique ..	210
Italy ..	247	Lawn ..	99	Mashonaland ..	184
Asia ..	247	Lead ..	26, 72	Mastic ..	42
Cities and ..		Leather ..	59	Matabeleland ..	184
towns ..	248	Leeds ..	117	Mate ..	42
Climate ..	247	Leeward Islands ..	193	Meat ..	60
Commerce ..	248	Leicester ..	119	Meat-packing ..	
Configuration ..	247	Leipzig ..	216	centres ..	61
Exports ..	248	Leith ..	120	Melbourne ..	154
Fisheries ..	247	Lemons ..	44	Memphis ..	295
Imports ..	248	Lille ..	206	Mercury ..	28
Industries ..	247	Lima ..	310	Metals and ..	
Manufactures ..	248	Limerick ..	122	minerals ..	16
Minerals ..	248	Limestones ..	27, 72	Mexico ..	299
Population ..	247	Linen ..	101	Mica ..	28
Position ..	247	Linseed ..	43	Middlesbrough ..	120
Productions ..	247	Liquorice ..	39	Milah ..	249
Railways ..	248	Lisbon ..	255	Minneapolis ..	295
Rivers ..	248	Liverpool ..	115	Mohair ..	61
Soil ..	247	Lodz ..	230	Mombasa ..	185
Ivory ..	59	Logwood ..	39	Montevideo ..	309
„ vegetable ..	51	London ..	112	Montreal ..	146
Jamaica ..	192	Louisville ..	295	Moscow ..	230
Japan ..	268	Lucknow ..	169	Mother of pearl ..	62
Java ..	225	Lyons ..	205	Munich ..	217
Jersey City ..	291	Lyttelton ..	161	Muslin ..	101
Jet ..	26	Macao ..	256	Mustard ..	45
Johannesburg ..	182	Macaroni ..	42	Mutton, fresh ..	61

	PAGE		PAGE		PAGE
Nagasaki ..	271	Norway ( <i>contd.</i> )		Patna ..	169
Nagpur ..	170	Cities and		Peking ..	274
Nails ..	101	towns ..	245	Peltry ..	62
Nanaimo ..	147	Climate ..	244	Pemican ..	62
Nantes ..	206	Commerce ..	245	Penang ..	137
Naples ..	248	Configuration	244	Pen, manufacture	102
Naval and mili-		Fisheries ..	244	Pennine Range	68
tary stations	133	Industries ..	244	Pepper ..	45
Natal ..	178	Manufactures	244	Pernambuco ..	307
Area ..	178	Position ..	244	Persia ..	275
Coalfields ..	179	Railways ..	244	Perth, N.B. ..	121
Commerce ..	179	Rivers ..	244	.. W.A. ..	158
Configuration	178	Nottingham ..	118	Feru ..	309
Population	178	Nova Scotia ..	143	Peruvian bark	38
Productions	179	Nuremberg ..	218	Petrograd ..	229
New Brunswick	145	Nutmegs ..	45	Petroleum ..	29
Newcastle,		Oak ..	41	Philadelphia ..	293
N.S.W. ..	156	Oats ..	36	Philippine	
.. upon-Tyne	118	Ocean currents	13	Islands ..	297
Newfoundland	148	Odessa ..	230	Phoenicians ..	1
Commerce ..	149	Oil, Linseed ..	43	Phormium ..	160
Exports ..	149	.. Olive ..	43	Pietermaritz-	
Imports ..	149	.. Palm ..	43	burg ..	179
Population	149	.. Wells ..	29	Piræus, the ..	261
New Caledonia	210	Oils ..	43	Pittsburg ..	295
New Guinea ..	225	Essential ..	43	Plants, common	34
New Orleans ..	291	Fixed ..	43	Platinum ..	30
New South		Manufacture	101	Porcelain ..	102
Wales ..	154	Oldham ..	119	Pork-packing	
New Westminster	147	Olive oil ..	43	centres ..	61
New York ..	289	Omaha ..	295	Port ..	54
New Zealand		Omdurman ..	188	Port Darwin	157
hemp ..	51	Ontario ..	146	.. Elizabeth	178
New Zealand	159	Oolite ..	29	.. of Spain	191
Configuration	160	Opium ..	38	.. Said ..	188
Exports ..	161	Oporto ..	255	Portsmouth ..	118
Forests ..	160	Oranges ..	44	Portugal ..	255
Imports ..	161	Orange Free		Pottery ..	102
Pastures ..	161	State ..	179	Prague ..	254
Position ..	159	Osaka ..	270	Preston ..	119
Size ..	159	Ottawa ..	146	Pretoria ..	181
Nicaragua ..	300	Oudh ..	169	Prince Edward	
Nickel ..	28	Paisley ..	120	Island ..	144
Niger Protecto-		Palm oil ..	43	Puerto Rico ..	296
rate ..	176	Panama ..	301	Punjab ..	170
Nijni Novgorod	232	Paper making	101	Quebec ..	145
Norrköping ..	246	.. substances used	46	Queensland ..	156
Northampton	121	Para ..	307	Queenstown ..	120
Norway ..	244	Paraguay ..	310	Quito ..	309
Area ..	244	Paris ..	204	Rag Trade ..	102

PAGE		PAGE		PAGE	
Railways of		St. Helena	135	Singapore	137
Ireland	109	St. John	145	Skins	30
" Scotland	138	St. John's	149	Slates	31, 82
Raisins	52	St. Louis	295	Smyrna	258
Ranching	61	St. Lucia	193	Southampton	121
Rangun	171	St. Malo	208	South American	
Reading	121	St. Paul	295	Republics,	
Reims	207	St. Vincent	193	money of	
Réunion	209	Salford	116, 118	South Australia	156
Rice	36	Salonica	258	Spain	237
Riga	230	Salvador	300	Animals	237
Rio de Janeiro	307	Sandstone	18	Area	237
Rock salt	30	San Francisco	292	Cities & towns	239
Rome	248	Santiago	308	Climate	237
Rotterdam	224	Sarsaparilla	39	Commerce	288
Roubaix	206	Saskatchewan	147	Foreign de-	
Routes to Aus-		Satin	62	pendencies	239
tralasia	126	Scotland	80	Manufactures	238
France	123	Birds	85	Minerals	238
India	125	Climate	83	Population	237
Liverpool to		Domestic		Position	237
Canada	125	animals	85	Productions	237
Liverpool to		Farming	84	Railways	238
New York	124	Fisheries	85	Soil	237
Low Countries	123	Geological		Spices	44
North of		structure	82	Spirits	45
Europe	312	Granite	83	Starches	46
Rumania	261	Lakes	82	Steamship lines	12
Russian Feder-		Metals and		Stettin	219
ative Republic	226	minerals	83	Stockholm	246
Area	226	Mountains	81	Stocking manu-	
Canals	226	Rivers	82	facture	103
Cities and		Soil	83	Straits Settle	
towns	229	Vegetable		ments	172
Climate	227	productions	84	Strassburg	219
Commerce	229	Wild animals	85	Stuttgart	218
Configuration	226	Seaports	112	Sucre	312
Factory indus-		Scenna	39	Suez Canal	126, 187
tries	228	Serbia	262	Sugar	47
Fisheries	228	Seville	239	Sulphur	33
Population	226	Shanghai	274	Sumach	40
Position	226	Shawl weaving	103	Sumatra	225
Productions	228	Sheffield	117	Sunderland	119
Railways	227	Sherry	54	Surinam	225
Rivers	226	Shipbuilding	101	Swansea	120
Soil	227	Shoes	93	Sweden	245
Saddlery	103	Siam	275	Area	245
Sago	46	Sierra Leone	175	Cities and	
Sahara	209	Silk	62	towns	246
St. Etienne	206	Silver	31	Climate	245

	PAGE		PAGE		PAGE
Sweden ( <i>contd.</i> )		Tunis .. ..	208	United States ( <i>contd.</i> )	
Commerce	246	Turkey in Asia	258	Railroads ..	288
Configuration	245	Europe	257	River ports	294
Industries ..	245	Turmeric ..	40	Rivers ..	286
Minerals ..	245	Turpentine ..	43	Situation ..	281
Population	245	Tyne ports ..	118	Uruguay ..	368
Position ..	245	United Kingdom	65	Valencia	239, 305
Railways ..	245	Canals ..	105	Valparaiso ..	308
Rivers ..	245	Coast line ..	66	Vancouver City	147
Switzerland ..	250	Commercial		Island	147
Animals ..	250	towns ..	112	Vegetable fibres	49
Area ..	250	Configuration	66	Vegetable	
Cities and		Exports ..	112	products	34
towns ..	251	Imports ..	112	Venezuela ..	304
Climate ..	250	Manufactures	93	Venice	2, 249
Commerce	251	Means of		Victoria, B.C.	147
Configuration	250	transport	105	colony of	153
Forests ..	250	Position ..	65	Vienna ..	254
Industries ..	250	Railways ..	107	Villa Rica ..	310
Manufactures	250	Rivers and sea-		Vine, the ..	52
Minerals ..	250	ports ..	105	Vladivostok ..	231
Population	250	Towns ..	112	Wales, climate of	74
Position ..	250	Trade routes	123	Warsaw ..	230
Productions	250	United States	281	Watches ..	95
Railways ..	251	Agricultural		Wellington, N.Z.	161
Rivers ..	251	products	284	West Ham ..	118
Sydney ..	155	Canals ..	287	Riding of	
Syra ..	261	Climate ..	281	Yorkshire ..	104
Tapioca ..	46	Coast line ..	283	Western	
Tasmania ..	159	Coast trade	287	Australia ..	157
Tea ..	47	Commerce ..	289	Western Pacific	188
Teheran ..	275	Commercial		Wheat ..	36
Thread ..	103	centres ..	289	Wilton ..	121
Tientsin ..	274	Configuration	281	Windward	
Tiflis ..	231	Extent ..	281	Islands ..	193
Timber ..	51	Industries ..	284	Winds ..	14
Timor	225, 256	Lake ports	294	Wine ..	52
Tin ..	32	Lakes ..	286	Winnipeg ..	146
Tobacco ..	48	Means of com-		Wool ..	63
Tobolsk ..	231	munication	285	Woollen manu-	
Tokio ..	270	Mineral pro-		factures	64, 103
Toronto ..	146	ducts ..	285	Yokohama ..	270
Toulon ..	207	Natural re-		Zinc ..	33
Transvaal ..	179	sources ..	283	Zones ..	12
Trade routes	123	Population	283	Yugo-Slavia ..	254
Trieste ..	254	Products of		Zululand ..	179
Trinidad ..	191	agriculture	284	Zürich ..	251

# COMMERCIAL GEOGRAPHY.

## TEST PAPERS.

### BOOK I.

*Questions marked with an asterisk are from recent Examination Papers set by the London Chamber of Commerce, National Union of Teachers, Durham University, etc.*

#### CHAPTERS I & II.

1. Explain the word Commerce, and carefully describe what Commercial Geography deals with.
2. When, and by whom, were the earliest commercial transactions carried on in England? How were these conducted?
3. Name the various branches of Commerce, and describe each separately.
4. What is understood by the currency of a country? Compare the British currency with the French, Italian, and Belgian.
5. Explain the difference between Exports and Imports; and compare in a general way the Exports of the United Kingdom with those of the United States.
6. Which are the most important Commercial Countries of the world?
7. Name the Oceans of the world, and say which you think is of most use commercially.
8. In what way does climate affect the trade of a country? Illustrate by reference to Western Australia.
9. Tabulate the principal steamship lines and their routes.
10. Explain how ocean currents affect commerce, and illustrate your answer by reference to the Gulf Stream.
- \*11. What are the chief advantages of site and climate that a commercial centre should possess? Illustrate by a careful description of three of the most important commercial centres of the world.



- \*12. "A deep depression is approaching the British Isles from the Atlantic Ocean. Storm signals have been hoisted along the west and south coasts of Ireland and along the south-western shores of England." Explain precisely what is meant by these statements, on what evidence such a warning would be issued, and what winds and weather might be expected to follow.

### CHAPTERS III & IV.

13. Enumerate the principal minerals of England, naming the districts where found.
- \*14. What are the natural advantages that England possesses for the manufacture and export of iron and steel goods?
15. Name the "precious" metals, and say where they are found.
16. In what parts of the world are natural mineral springs to be found? Describe the oil wells of North America and Russia.
17. Which are the most prolific iron-producing countries in the world?
- \*18. Describe from a geographical standpoint the British iron trade, indicating more particularly the available supplies of ore and fuel.
19. Which are the most valuable British trees? Where are they found in most abundance?
20. Enumerate the principal cereals, and say in which countries they are chiefly grown.
21. What is cork? In which countries is it found, and of what use is it?
- \*22. What are the climatic conditions required for the cultivation of cotton? What countries export raw cotton? From what sources are the best qualities obtained?
23. What vegetable products of commercial importance are obtained from the West Indies?
24. Where do we obtain our chief supplies of tobacco, tea, and coffee?

### CHAPTER V.

- \*25. Name the most important commercial products of animal origin used in this country for manufacturing purposes.
26. Which are the chief articles of animal food imported into England?

27. Name the centres of the following manufactures :—silk, wool, leather, and cheese.
28. Give a description of the sources of our supply of dairy produce, and write a short article describing the advantages of encouraging dairy farming in this country.
29. What animal products do we procure in the locality lying between Alaska and Labrador ?
30. From which of the British Possessions do we obtain wheat, gold, fruit, raw cotton, sugar, tea, furs, and timber ?

## CHAPTERS VI & VII.

31. Describe precisely the geographical position of the British Isles, and compare the climate with that of other countries in the same latitude.
32. Describe the configuration of the British Isles, and explain how this has affected their commercial position.
33. Give a short description of the districts of England and Wales from which minerals are obtained.
34. What soils are found in the following counties :—Oxford, Buckingham, Hertford, Cambridge, and Norfolk, and what are the productions ?
35. Name the chalk hills of England, and describe them, giving the principal towns in their neighbourhood and their staple industries.
36. Give the chief sea-routes from Great Britain to Ireland. Sketch a journey by the *quickest route* from London to Cork.
37. Describe in detail the towns and industries of the Black Country. What railways connect this district with other parts of England ?
38. Give the position of the agricultural areas of England, and say what crops are favoured in the different localities.
39. From your knowledge of the chief British sea-ports, discuss the statement : " Great Britain takes the lead in maritime trade on account of her numerous and excellent natural harbours."
40. What fruits are most successfully cultivated in England, and in what parts are they found ?
41. Give a description of the fisheries of England, and name the principal salmon rivers.

42. Write a description of the chief characteristics of the following counties:—Essex, Lincolnshire, Norfolk, Devonshire, Staffordshire, and Derbyshire.

#### CHAPTERS VIII & IX.

43. Give a list of the chief metal and mineral productions of Scotland and Ireland, with the districts where they are found.
44. Describe the manufactures of the following towns: Glasgow, Dundee, Paisley, Aberdeen, Belfast, and Dublin.
45. What do you know of the agricultural conditions of Ireland?
46. Describe the Highlands and Lowlands of Scotland, and name the most important commercial towns in them.
47. Explain why Ireland is often described as the "Emerald Isle," and account for this.
48. Describe the geological structure of the central plain of Ireland, and say what product of commercial value we obtain from this locality.

#### CHAPTER X.

49. Name the six largest towns in the United Kingdom engaged in the cotton industry.
50. What are the following towns noted for:—Nottingham, Norwich, High Wycombe, Halifax, Burton-on-Trent, and Derby?
51. Where are carpets manufactured in Great Britain? Name the various kinds produced in the different towns.
52. Which are the chief iron-smelting districts of England?
53. What position does England hold in the production of earthenware goods? Which are the principal towns engaged in the industry?
54. Where is the manufacture of blankets carried on? Describe one of the towns engaged in this industry in England.
55. In what parts of Britain are tin, copper, iron, and mineral oils to be found? Account for the comparative decay of some of these industries.
56. What industries are carried on in the basin of the River Tyne? Name the chief towns and exports of this district.
57. Compare Scotland with Ireland as regards area, population, and mineral resources.

# TEST PAPERS.

58. Give some account of the boot and shoe trade of the United Kingdom, and say which are the principal towns engaged in the industry.
59. Describe the route of a commercial traveller, calling at the following places :—Bedford, Northampton, Leicester, Birmingham, Warwick, Oxford, Reading, and returning *via* Croydon to London.
60. Give a short description of the Manchester Ship Canal, and name the chief towns in its neighbourhood.
61. Where is the hosiery trade of this country chiefly carried on ?
62. Name the chief iron-smelting districts of Great Britain, and the principal towns engaged.
63. In which towns are the following articles manufactured :—buttons, nails, cycles, scissors, files, rifles, cannons, pens, and pins.
64. Give the position and chief industries of Limerick, Barrow-in-Furness, Jarrow, Coventry, Dundee, Longton, Crewe, and Sheffield.
65. Give the chief towns and trade of Yorkshire, and say which towns you think have progressed most in recent years.
66. Where is ship-building carried on in the United Kingdom ?

## CHAPTERS XI & XII.

67. Name the most important rivers of England, together with the principal commercial towns on each, describing the industries carried on both in the town and in the neighbouring country.
68. Which of the English canals connect rivers, and what is the length of each ?
69. Name the principal towns on the Great Western Railway, and describe generally the goods traffic of this most important Company.
70. In what way is our manufacturing prosperity dependent upon our mineral wealth ?
71. Enumerate our principal ports, and say from which you would sail for (a) New York, (b) Cape Town, (c) Bombay, and (d) Stockholm.
72. Tabulate the chief railways of England, giving the London terminus of each and the chief towns on each line.

- \*73. Give the position and chief trade of the following towns :—  
Dorchester, Birkenhead, Luton, Dublin, Wolverhampton,  
Paisley, Redditch, Betllesda, and Falkirk.
- \*74. Draw neatly a sketch-map of the main line of the Midland Railway.
- \*75. On what railway is each of the following towns situated :—  
Stafford, Oxford, Southampton, Exeter, Holyhead,  
Leicester, and Chester?
- \*76. Draw a sketch-map of the East Coast of England, inserting rivers and chief sea-ports.
- \*77. By what railway would you travel from :—  
(a) Stafford to Rugby,  
(b) Dublin to Galway,  
(c) Luton to Leicester,  
(d) York to Newcastle?
- \*78. Draw neatly a sketch-map illustrating a journey from London to meet an American Liner at Queenstown. State what railways you would travel by in England and Ireland, and give approximately the time occupied by the journey.
79. Tabulate the chief railways of Scotland and Ireland, giving the principal towns on each line.
80. Draw up a table showing the most important Imports and Exports of the United Kingdom.

## CHAPTER XXII.

81. Name the principal manufactures carried on in London.
82. Describe the local industries of the following towns :—  
Bristol, Oldham, Cork, Paisley, Northampton, and  
Coventry.
83. Which are the principal British ports, and what is the chief trade of each?
84. In what towns are the following industries carried on :—  
shipbuilding, brewing, iron-smelting, and sugar-refining?
- \*85. Draw a sketch-map of the southern portion of Scotland, showing the following towns etc. :—Glasgow, Edinburgh, Dumfries, Galashiels, the Forth Bridge, the River Tweed, and the River Clyde.
86. Describe the local industries of London, and identify the districts engaged in each by means of a table.

## CHAPTERS XIV &amp; XV.

87. Name the principal trade routes between England and the Continent, mentioning the ports and commercial traffic.
88. Which of our shipping lines conduct the bulk of trade with America?
89. What was the effect of the Suez Canal upon our Eastern trade? Explain fully.
90. Why is the Canadian route to Australia not to be recommended for general trade purposes?
91. Name our latest possessions in Africa, and say what you know of their commercial importance.
92. Draw a sketch-map illustrating the steamship routes from Liverpool to North America.
93. Describe the route from London to India, and name the principal shipping companies which make the journey.
94. Give a description of the three principal routes from England to Australia.
95. Draw up a table showing the extent and commercial value of British Possessions in different parts of the world.
- \*96. Compare roughly with Great Britain in respect of size and population :—the Cape of Good Hope, Australia, Canada, and India.
- \*97. Describe the three available routes from London to the "Low Countries."
- \*98. Trace the route of a steamer from London to Calcutta. Give distances, and time occupied in making the entire journey.
- \*99. Describe the Suez Canal, with the object of showing its commercial value. Illustrate by a sketch-map.
- \*100. Describe the voyage from England to the Cape, giving the ports of departure and arrival, and places of call.

## GENERAL QUESTIONS.

1. Give the chief towns and describe the trade of the Black Country, South Wales, Ulster, and the Clyde Valley. What British towns have progressed most during recent years?

2. Enumerate the principal minerals of England in order of value, and state where they are found.
3. Give the position and chief trade of six of the following towns: Sheffield, Sunderland, Coventry; Cork, Middlesbrough, Dundee, Preston, Swansea, and Perth.
4. What do you understand by Protection and Free Trade? Give the chief arguments for and against each.
5. What peculiar physical features are requisite for the commercial success of a country? Illustrate your answer by reference to England.
6. Tabulate our import and export trade with the United States.
7. Define *emigration*, and say what proportion of British emigrants go to Canada, Australia, and South Africa respectively.
8. Describe the position and the trade of each of the following towns:—Glasgow, Belfast, Nottingham, and Reading.
9. Give some account of the following:—St. Andrews, Paisley, Loch Lomond, the Caledonian Canal, the Blaskets, Lough Neagh, Belfast, Cork, the Cheviots, the Wolds.
10. Draw in outline a map of the coast of England from the Wash to Eastbourne, marking the chief coast towns, capes and rivers.
11. Draw a map to show the course of the Thames, its chief tributaries, the counties through which it passes and the most important towns on its banks.
12. Where are the following, and for what reasons are they noteworthy:—Aberdeen, Bolton, Burton-on-Trent, Cork, Glasgow, Killarney, Leith, Merthyr Tydvil, Portsmouth, Winchester?
13. What countries of the world suffer most from (a) an excessive, (b) a deficient rainfall? Describe the causes in each case, and the results as affecting commerce.
14. On what countries and to what extent is England dependent for the supply of some of the common building materials?
15. Describe and illustrate by sketch maps the chief Atlantic trade routes.
16. To what extent is the backward state of Ireland to be explained by geographical causes?
17. What are the chief physical conditions by which climate is affected?

# COMMERCIAL GEOGRAPHY.

## TEST PAPERS.

### BOOK II.

*Questions marked with an asterisk are from recent Examinations Papers set by the London Chamber of Commerce, National Union of Teachers, Durham University, etc.*

#### CHAPTER I.

1. Name the British Possessions in Europe, giving reasons for maintaining them.
2. Where are the Bermudas, and the Bahamas? Say what you know of these, and describe the principal productions.
3. Which are our principal Naval Stations in Asia? Describe one of them fully.
- \*4. Name the chief British Possessions in Africa. Describe the position, size, and commercial importance of St. Helena and Ascension Island.

#### CHAPTER II.

5. What is the difference between a Colony and a Dependency, and between a Dependency and a Protectorate? Give examples of each.
6. Name the principal productions of the British Possessions in North America.
7. What is the general trade of Canada? With whom is it carried on?
8. Say what you know of the Canadian-Pacific Railway, giving the principal towns on the route and a description of the country it passes through.
9. What do you know of the island of Newfoundland?
10. Describe the trade of Canada with the Mother Country, naming the chief Exports and Imports.

#### CHAPTER III.

11. Describe the climate of Australia, and show how the absence of rain renders it unsuitable for certain commercial industries.
12. What are the chief commercial products of Australia and New Zealand?



13. Name the principal towns of Western Australia, and describe their commercial importance.
14. Say what you know of the imports and exports of Australia and New Zealand.
15. With the aid of a sketch-map or maps, give a careful account of the Continent of Australia, having especial regard to the configuration of the land, the prevailing winds, the distribution of rainfall, and the character of the products of the various parts.
6. Describe in detail the *quickest route* from London to Tasmania.

## CHAPTER IV.

17. Name the principal British Possessions in Asia.
- \*18. Describe the productions of India and name the principal exports to the United Kingdom. Which English county is specially interested in Indian trade?
19. Give a brief description of the various industries of India.
20. What are the principal productions of Ceylon?
21. Say what you know of the Straits Settlements in general, and of Singapore in particular.
- \*22. Draw a sketch-map showing the chief railways of India. Insert the following towns:—Bombay, Calcutta, Madras, Lahore, Benares, Peshawar, Jabalpur and Jaipur.

## CHAPTER V.

23. Name the British Possessions in Africa and describe their position.
24. What are the chief industries carried on in British South Africa? Name the imports and exports.
25. Give a short account of each of the principal rivers of Africa.
26. Where are the following towns, and what do you know of them:—Zanzibar, Algiers, Alexandria, Khartum, Buluwayo, Benin, Durban, and Suakim?
27. What do you know of the island of Madagascar?
- \*28. Describe fully the *quickest route* from London to Buluwayo.
- \*29. What do you understand by the Federation of the British South African States?
- \*30. Say what you know of the Cape of Good Hope under these heads:—Area, population, productions, and chief towns.

## CHAPTER VI.

31. Describe the position (latitude and longitude) and climate of the West Indies, together with anything you know of their origin.
32. What are the principal West Indian Exports to and Imports from the United Kingdom? Which shipping lines carry on this trade?
33. Name the productions of the Bahamas.
34. Briefly describe the Windward and Leeward Islands, and say what you know of their productions.

## BOOK III.

## CHAPTER I.

35. Describe the principal commercial rivers of Europe, and name the chief towns on each.
36. Explain carefully the following:—"The rivers of Europe flow generally in a North-Western and South-Eastern direction." Name the most important European commercial rivers.

## CHAPTER II.

37. Describe the configuration and position of France. Is this favourable to her commercial prosperity?
38. Which are the principal railways of France, and the chief towns on them?
39. Why are the climatic conditions of France peculiarly adapted to the growth of the vine? How has this affected the general trade of certain portions of the country?
40. Which are the most notable manufactures of France? Name the principal towns engaged in them.
41. What are the chief articles of Export from France to England? Give their value in round numbers.
42. Where are the following towns, and what are they noted for:—Calais, Rouen, Lyons, Marseilles, Bordeaux, and Havre?

## CHAPTER III.

43. What countries are included in the German Republic? Describe their productions and trade.
44. Name the principal rivers of Germany and the chief towns on each.

45. Describe the "Inland communications" of Germany.
46. Which are the most important German seaports? Name the industries they are chiefly interested in.
47. Describe the foreign trade of Germany, and give a list of the principal articles of Export.
48. What do you know of the following towns:—Berlin, Hamburg, Munich, Frankfort, and Hanover?

## CHAPTER IV.

49. "Holland consists almost entirely of alluvial deposits." What effect has this upon its productions?
50. Name the manufactures of the Netherlands, and the principal trade centres.
51. Give an account of the exports to the United Kingdom from Holland.
52. What are the principal industries of Amsterdam and Rotterdam?
53. Give a short account of the Dutch foreign possessions.

## CHAPTER V.

54. Give a short description of the Trans-Siberian Railway.
55. What are the principal productions of the Steppes?
56. Name the chief Russian ports and describe their trade.
57. Tabulate the Import and Export trade of Russia with the United Kingdom.
58. Where are the following towns, and what are they famous for:—Moscow, Odessa, Riga, and Nijni Novgorod?

## CHAPTER VI.

59. Name the principal mineral, vegetable, and animal products of Belgium.
60. Describe the inland system of transport in Belgium and show how it is connected with France, Holland, and Germany.
61. What are the principal exports of Belgium to the United Kingdom?
62. Describe the position and commercial importance of the following towns, and say what are the manufactures carried on in each:—Brussels, Antwerp, Ghent, and Liège.

## TEST PAPERS.

### CHAPTER VII.

63. Describe the climate, soil, and productions of the Iberian Peninsula.
64. What minerals are to be found in Spain? Name the localities where they are obtained.
65. What is the leading agricultural pursuit, and the chief manufacturing industry of Spain?
66. Describe the principal ports of Spain, their position, size, and trade.
67. Name the Spanish possessions and their productions.

### CHAPTERS VIII & IX.

68. What are the principal Exports to the United Kingdom from Denmark?
69. Give a short description of Copenhagen, its climate, position, trade and population.
70. Describe the configuration and climate of Norway and Sweden.
71. Which are the principal manufacturing towns of the Scandinavian Peninsula, and where are they situated? Name the industries.

### CHAPTERS X & XI.

72. Describe the chief industries of Italy.
73. Give some account of the island of Sicily, its position, climate, and productions.
74. Say what you know of the Italian fisheries, and other maritime industries of Italy.
75. What are the principal Italian Imports from and Exports to the United Kingdom?
76. Describe the manufactures of Switzerland.
77. Name the principal commercial towns of Italy and Switzerland.

### CHAPTER XII.

78. Describe the River Danube from Vienna to the Black Sea.
79. Name the principal industries of Austria.
80. Give a short description of the most important towns of Austria and Hungary.

### CHAPTER XIII.

81. What are the vegetable products of Portugal? Name the chief Exports to the United Kingdom.

82. What is the value of the manufactured articles imported by Portugal from the United Kingdom, and what do they principally consist of?
83. Describe the capital of Portugal.
84. Name the Portuguese Foreign Possessions and their chief products.

## CHAPTERS XIV &amp; XV.

85. Where are the following, and what do you know of them :—Salonica, Damascus, Beyrout, Syria, and Athens?
86. Give a short description of Constantinople.
87. Describe the productions of Greece. Which of these are exported to our country?
88. Where are Rumania, Serbia, and Montenegro? Name the capital of each, and the most important industries.

## CHAPTER XVI.

- \*89. Divide the continent of Asia into different climatic districts, describing the effect upon commercial industries of the varying conditions.
90. Describe generally the different minerals found in Asia.
91. Enumerate the principal vegetable productions of the continent of Asia.

## CHAPTER XVII.

- \*92. Give a general description of the position, configuration and climate of the islands of Japan.
93. Name the chief Imports of the United Kingdom from Japan.
94. Describe the following towns :—Tokio, Yokohama, and Kioto.

## CHAPTER XVIII.

95. Describe the soil and climate of China.
96. Name the principal productions of China, and say where they are found.
- \*97. Give a short account of the chief manufactures of China, and describe the internal trade of the country.
- \*98. What proportion of Chinese trade is carried on with Great Britain? Name the chief Treaty Ports.

## CHAPTERS XIX &amp; XX.

- \*99. The staple industries of the United States are carried on in six clearly defined geographical divisions. Name these districts, with their productions and chief towns.
- \*100. Carefully describe the position of the chief coal and iron districts of North America, paying special attention to the means of communication for bulky freight.
- \*101. Describe carefully with the aid of diagrams the precise position of New York City, Chicago, and San Francisco, with the object of showing geographical reasons for their greatness.
- \*102. Draw a map of the United States, showing the five greatest seaports, and the principal inland towns.

## CHAPTER XXI.

- 103. Name the principal minerals of Mexico, and enumerate the chief Exports of the country.
- 104. Describe Nicaragua, and give an account of its productions.
- \*105. Analyse the positions of the Panama and Nicaragua Canals, with the object of showing whether the latter is likely to prove more effective to commerce than the former.

## CHAPTERS XXII &amp; XXIII.

- 106. Give an account of the trade, manufactures, and products of Brazil.
- \*107. Carefully describe the chief vegetable products of South America.
- 108. Write short notes dealing specially with the productions, ports, and commercial possibilities of Chile, Uruguay, Ecuador, Peru, Paraguay, Bolivia, and the Argentine Republic.

## GENERAL QUESTIONS.

- 1. What do you understand by the "British Dominions beyond the Seas"? Of what value are they to the Mother Country?
- 2. Name the largest British Colony. Compare it with Great Britain as regards area and population. What are its chief productions?
- 3. Name the eight largest cities in the British Empire, and give the most populous possessions of King George V.
- 4. What is the object of the Anglo-Japanese Alliance? Say what you know of the industries and the national characteristics of our ally in the far East.

5. Name the European States which border the Baltic Sea, and their chief seaports. Say what you know of the Baltic Canal.
6. Describe the agricultural and manufacturing industries of India.
7. State what you know of the Deccan, Lahore, Weihaiwei, Nepal, Aden, The Sunderbunds, Simonstown, and Port Nolloth.
8. Draw neatly a sketch map of India, indicating the localities where tea, cotton, wheat, opium, rice, indigo, jute, and coffee are produced.
9. Give any information you can respecting the Government and the trade of China.
10. Compare the coast lines of the different continents, and draw any deductions you can from their chief characteristics.
11. Which are the most important agricultural areas of the world?
12. From what countries do we obtain our chief supplies of tobacco, tea and coffee?
13. Write short notes describing carefully the position and commercial advantages of Port Arthur, Singapore, the Baltic Canal, the St. Gothard Tunnel, and Brindisi.
14. What coast towns do you suggest should be connected with the main line of the Cape to Cairo Railway? Draw a sketch map illustrating your answer, and state to what nationality each port belongs.
15. Compare with Great Britain in respect of size and population:—the Cape of Good Hope, Australia, Canada, India, and the United States.
16. What is a Chartered Company? Say what you know of the British South Africa Chartered Company and the territories over which it exercises control.
17. Draw neatly a sketch map of Australia, marking clearly the chief commercial towns.
18. What are the chief mineral resources of the Transvaal?
19. Give a short description of the industries carried on in the following towns of the United States:—New York, Pittsburg, Chicago, and Louisville.
20. Give a general description of the industries and commerce of Australia.
21. Write short notes dealing with the productions, ports, and commercial possibilities of Corea, Natal, and Ceylon.
22. Give a short account of the difference made to the map of Europe by the Peace of Versailles. 1919.

# — AN ABRIDGED LIST OF THE — COMMERCIAL HANDBOOKS — OF — SIR ISAAC PITMAN & SONS, LTD.

LONDON: 1 AMEN CORNER, E.C.4  
BATH: Phonetic Institute. MELBOURNE: The Rialto, Collins St.  
NEW YORK: 2 West 45th St.

**The Prices contained in this Catalogue  
:: apply only to the British Isles ::**

## TERMS—

*Cash must be sent with the order, and must include an approximate amount for the postage. When a remittance is in excess of the sum required, the surplus will be returned. Sums under 6d. can be sent in stamps. For sums of 6d. and upwards Postal Orders or Money Orders are preferred to stamps, and should be crossed and made payable to*

SIR ISAAC PITMAN & SONS, LTD.

*Remittances from abroad should be by means of International Money Orders in Foreign Countries, and by British Postal Orders within the British Overseas Dominions. Colonial Postal Orders are not negotiable in England. Foreign stamps cannot be accepted.*

## ARITHMETIC

- FIRST STEPS IN COMMERCIAL ARITHMETIC.** By ARTHUR E. WILLIAMS, M.A., B.Sc. In crown 8vo, limp cloth, 80 pp. Net 1/3
- THE ELEMENTS OF COMMERCIAL ARITHMETIC.** By THOMAS BROWN. In crown 8vo, cloth, 140 pp. Net 2/-
- BUSINESS ARITHMETIC. Part I.** In crown 8vo, cloth, 120 pp. 1/3. Answers 1/-
- BUSINESS ARITHMETIC. Part II.** In crown 8vo, cloth, 144 pp. 1/3. Answers 1/-
- COMPLETE COMMERCIAL ARITHMETIC.** Contains Parts I and II above mentioned. In crown 8vo, cloth, 264 pp. 3/- Answers 1/6
- SMALLER COMMERCIAL ARITHMETIC.** By C. W. CROOK, B.A., B.Sc. In crown 8vo, cloth, 1/6 net. Answers Net 1/6
- FIRST STEPS IN WORKSHOP ARITHMETIC.** By H. P. GREEN. In crown 8vo, limp cloth, about 80 pp. Net 1/3
- COMPLETE MERCANTILE ARITHMETIC.** With Elementary Mensuration. By H. P. GREEN, F.C.Sp.F. In crown 8vo, cloth gilt, with Key, 646 pp. Net 5/-
- Complete book without Key, 600 pp., 4/6 net. Key separately, 1/3 net. Also in three parts. Part I, 300 pp., 2/6 net. Part II, 208 pp., 1/6 net. Part III, 100 pp., 1/- net.
- COUNTING HOUSE MATHEMATICS.** By H. W. PORRITT and W. NICKLIN, A.S.A.A. In crown 8vo, cloth, 120 pp. Net 1/8
- ARITHMETIC AND BOOK-KEEPING.** By THOS. BROWN, F.S.S., and VINCENT E. COLLINGS, A.C.I.S. In two parts. Part I, 124 pp. Part 2, 115 pp. Each in crown 8vo, cloth Net 1/3
- LOGARITHMS FOR BUSINESS PURPOSES.** By H. W. PORRITT and W. NICKLIN, A.S.A.A. In crown 8vo, limp cloth Net 9d.
- RAPID METHODS IN ARITHMETIC.** By JOHN JOHNSTON. Revised and Edited by G. K. BUCKNALL, A.C.I.S. (Hons.). New and Enlarged Edition. In foolscap 8vo, cloth, 96 pp. Net 1/4
- EXERCISES ON RAPID METHODS IN ARITHMETIC.** By JOHN JOHNSTON. In crown 8vo, cloth Net 1/2
- METHOD IN ARITHMETIC.** A guide to the teaching of Arithmetic. By G. R. PURDIE, B.A. In crown 8vo, cloth, 87 pp. Net 1/6
- THE METRIC AND BRITISH SYSTEM OF WEIGHTS, MEASURES, AND COINAGE.** By DR. F. MOLLWO PERKIN. In 8vo, with numerous illustrations. Net 2/6



<b>MODERN BUSINESS AND ITS METHODS.</b> By W. CAMPBELL, Chartered Secretary.	
In two vols. Each 3/6 Net. Complete.	Net 6/-
<b>ANSWERS TO QUESTIONS IN BUSINESS TRAINING.</b> By the same Author.	Net 2/-
In crown 8vo, cloth, about 100 pp.	Net 2/6
<b>A COURSE IN BUSINESS TRAINING.</b> By G. K. DOCKNALL, A.C.I.S.	Net 1/-
In crown 8vo, 192 pp.	Net 4d.
<b>FACSIMILE COMMERCIAL FORMS.</b> New, Revised, and Enlarged Edition. Thirty-five separate forms in envelope	Net 8d.
Forms separately, per doz.	Net 3/6
<b>EXERCISE BOOK OF FACSIMILE COMMERCIAL FORMS.</b> In large post 4to, 32 pp.	Net 6d.
<b>FACSIMILE COMPANY FORMS.</b> Thirty-four separate forms in envelope	Net 6d.
Forms separately, per doz.	Net 6d.
<b>"NEW ERA" BUSINESS COPY BOOKS.</b> By F. HENRIS, F.C.I.S. Civil Service Style. In three books, Junior, Intermediate, and Senior. Each in stout paper	Net 6d.
4 covers, large post 4to, 32 pp.	Net 6d.
<b>BUSINESS TRAINING EXERCISE BOOK. Part I.</b> By JAMES E. SLADEN, M.A. (Oxon.), F.I.S.A. In large post 4to, 64 pp.	Net 6d.
<b>MANUSCRIPT LETTERS AND EXERCISES.</b> In envelope.	Net 6d.
<b>OFFICE ROUTINE COPY BOOKS, Nos. 1, 2, and 3.</b> Each in large post 4to, 24 pp.	Net 6d.
<b>COMMERCIAL HANDWRITING AND CORRESPONDENCE.</b> In foolscap 4to, quarter cloth, 80 pp.	Net 2/-
<b>BUSINESS HANDWRITING.</b> Seventh Edition, Revised. In crown 8vo, cloth, 84 pp.	Net 1/6
<b>HOW TO WRITE A GOOD HAND.</b> By B. T. B. HOLLINGS. In crown 8vo, oblong, 56 pp.	Net 1/-
<b>HANDBOOK FOR COMMERCIAL TEACHERS.</b> By FRED HALL, M.A., B.Com., F.C.I.S., etc. In crown 8vo, cloth gilt, 200 pp.	Net 2/6
<b>THE BUSINESS GIRL'S HANDBOOK.</b> By C. CHISHOLM, M.A., and D. W. WALTON. Foreword by SARAH BLUNHARDT. In crown 8vo, cloth, 176 pp.	Net 1/6
<b>THE BOY'S BOOK OF BUSINESS.</b> By the same Authors. Foreword by Lieut.-Gen. Sir R. S. S. BADEN-POWELL. In crown 8vo, cloth, 176 pp.	Net 2/-
<b>BUSINESS METHODS AND SECRETARIAL WORK FOR GIRLS AND WOMEN.</b> By HELEN REYNARD, M.A. In crown 8vo, cloth, 96 pp.	Net 1/6
<b>THE JUNIOR WOMAN SECRETARY.</b> By ANNIE E. DAVIS, F.H.C.S.T. In crown 8vo, cloth, 100 pp., with illustrations	Net 1/3
<b>CLERKS: THEIR RIGHTS AND OBLIGATIONS.</b> By EDWARD A. COPE. In foolscap 8vo, cloth, 160 pp.	Net 1/6
<b>GUIDE TO BUSINESS CUSTOMS AND PRACTICE ON THE CONTINENT.</b> By EMIL DAVIES. In crown 8vo, cloth, 154 pp.	Net 2/6
<b>HOW TO GET A SITUATION ABROAD.</b> By EMIL DAVIES. In crown 8vo, cloth, 70 pp.	Net 1/6
<b>THE JUNIOR CORPORATION CLERK.</b> By J. B. CARRINGTON, F.S.A.A. In crown 8vo, cloth gilt, with illustrations, 136 pp.	Net 1/6
<b>POPULAR GUIDE TO JOURNALISM.</b> By A. KINGSTON. 4th Edition. In crown 8vo, 124 pp., cloth	Net 2/6
<b>PRACTICAL JOURNALISM AND NEWSPAPER LAW.</b> By A. BAKER, M.J.L., and E. A. COPE. In crown 8vo, cloth, 180 pp.	Net 3/6

## CIVIL SERVICE

<b>CIVIL SERVICE GUIDE.</b> By A. J. LAWFORD JONES. In crown 8vo, cloth, 129 pp.	Net 1/6
<b>DIGESTING RETURNS INTO SUMMARIES.</b> By A. J. LAWFORD JONES, of H.M. Civil Service. In crown 8vo, cloth, 84 pp.	Net 2/-
<b>COPYING MANUSCRIPT, ORTHOGRAPHY, HANDWRITING, etc.</b> By the same Author. Actual Examination Papers only. In foolscap 4to, 48 pp.	Net 2/-
<b>CIVIL SERVICE HANDWRITING GUIDE AND COPY BOOK.</b> By H. T. JESSOP, B.Sc. In crown 4to, 32 pp.	Net 3d.
<b>CIVIL SERVICE AND COMMERCIAL COPYING FORMS.</b> In crown 8vo, 40 pp.	Net 6d.
<b>RULED FORMS FOR USE WITH THE ABOVE.</b> Books I and II. Each foolscap 4to, 40 pp.	Net 3d.
<b>CIVIL SERVICE AND COMMERCIAL LONG AND CROSS TOTS.</b> Two Series, each in crown 8vo, 48 pp.	Net 6d.
<b>CIVIL SERVICE ARITHMETIC TESTS.</b> By P. J. VARLEY-TIPTON. In crown 8vo, cloth, 102 pp.	Net 1/3
<b>CIVIL SERVICE ESSAY WRITING.</b> By W. J. ADDIS, M.A. In crown 8vo, limp cloth, 108 pp.	Net 1/6
<b>STUDIES IN ESSAY WRITING.</b> By V. P. PEACOCK. In crown 8vo, 64 pp. Paper	Net 3d.
Cloth	Net 3d.
<b>CIVIL SERVICE PRACTICE IN PRÉCIS WRITING.</b> Edited by ARTHUR REYNOLDS, M.A. (Oxon.). In crown 8vo, cloth, 240 pp.	Net 2/6
<b>ELEMENTARY PRÉCIS WRITING.</b> By WALTER SHAWCROSS, B.A. In crown 8vo, cloth, 80 pp.	Net 1/3

<b>GUIDE TO INDEXING AND PRÉCIS WRITING.</b> By W. J. WESTON, M.A., B.Sc. (Lond.), and E. BOWKER. In crown 8vo, cloth, 110 pp.	Net	1/6
<b>INDEXING AND PRÉCIS WRITING.</b> By A. J. LAWTON and JONES. In crown 8vo, cloth, 144 pp.	Net	2/-
<b>EXERCISES AND ANSWERS IN INDEXING AND PRÉCIS WRITING.</b> By W. J. WESTON, M.A., B.Sc. (Lond.). In crown 8vo, cloth, 144 pp.	Net	1/6

## ENGLISH AND COMMERCIAL CORRESPONDENCE.

<b>FIRST STEPS IN COMMERCIAL ENGLISH.</b> By W. J. WESTON, M.A., B.Sc. (Lond.). In crown 8vo, limp cloth, 80 pp.	Net	1/3
<b>FIRST STEPS IN BUSINESS LETTER WRITING.</b> By FRED HALL, M.A., B.Com., F.C.I.S., etc. In crown 8vo, limp cloth, 80 pp.	Net	1/3
<b>GUIDE TO COMMERCIAL CORRESPONDENCE AND BUSINESS COMPOSITION.</b> By W. J. WESTON, M.A., B.Sc. (Lond.). In crown 8vo, cloth, 146 pp., with many facsimile commercial documents.	Net	1/6
<b>MANUAL OF COMMERCIAL ENGLISH.</b> By WALTER SHAWCROSS, B.A. Including Composition and Précis Writing. In crown 8vo, cloth gilt, 234 pp.	Net	2/6
<b>HOW TO TEACH COMMERCIAL ENGLISH.</b> By WALTER SHAWCROSS, B.A. In crown 8vo, cloth gilt, 160 pp.	Net	2/6
<b>COMMERCIAL CORRESPONDENCE AND COMMERCIAL ENGLISH.</b> In crown 8vo, cloth, 272 pp.	Net	2/6
<b>ENGLISH MERCANTILE CORRESPONDENCE.</b> In crown 8vo, cloth gilt, 260 pp.	Net	3/-
<b>FIRST STEPS IN BUSINESS COMPOSITION.</b> Edited by R. W. HOLLAND, M.A., M.Sc., LL.D. In crown 8vo, limp cloth, 80 pp.	Net	1/3
<b>ENGLISH COMPOSITION AND CORRESPONDENCE.</b> By F. DAVIS, D.Lit., M.A., LL.B. (Lond.). In crown 8vo, cloth, 118 pp.	Net	1/6
<b>A GUIDE TO ENGLISH COMPOSITION.</b> By the Rev. J. H. BACON. 112 pp. cloth	Net	1/6
<b>ENGLISH GRAMMAR.</b> New Edition, Revised and Enlarged by C. D. PUNCHARD, B.A. (Lond.). In crown 8vo, cloth, 142 pp.	Net	2/-
<b>ENGLISH GRAMMAR AND COMPOSITION.</b> By W. J. WESTON, M.A., B.Sc. (Lond.). In crown 8vo, cloth, 320 pp.	Net	3/6
<b>SELF-HELP EXERCISES IN ENGLISH</b> (Reform Method). In crown 8vo, limp cloth, 80 pp.	Net	1/3
<b>NOTES OF LESSONS ON ENGLISH.</b> In crown 8vo, cloth, 208 pp.	Net	3/6
<b>PUNCTUATION CHART.</b> Size 7½ in. by 9½ in., mounted on card eyeletted and strung	Net	2d.
<b>PUNCTUATION AS A MEANS OF EXPRESSION.</b> By A. E. LOVELL, M.A. In crown 8vo, cloth, 80 pp.	Net	1/-
<b>PRÉCIS WRITING</b> } (See CIVIL SERVICE, page 4 and above.)		
<b>ESSAY WRITING</b> }		
<b>STUDIES IN ELOCUTION.</b> By E. M. CORBOULE (Mrs. Mark Robinson). With over 100 selections for Reciters and Readers. In crown 8vo, cloth gilt, 270 pp.	Net	2/6
<b>POCKET DICTIONARY.</b> Royal 32mo, 5 in. by 3 in., cloth gilt, 362 pp.	Net	1/6
<b>COMMERCIAL DICTIONARY.</b> In foolscap 8vo, paper boards, 192 pp.	Net	1/-
<b>BOOK OF HOMONYMS.</b> With copious Exercises on Homogeneous, and Homophonous Words and chapters on Compound Hyphenated Words, etc. By B. S. BARRETT. In crown 8vo, cloth, 203 pp.	Net	2/-

## COMMERCIAL GEOGRAPHY

<b>FIRST STEPS IN COMMERCIAL GEOGRAPHY.</b> By JAMES STEPHENSON, M.A., B.Com. There are 16 maps and diagrams included. In crown 8vo, limp cloth, 80 pp.	Net	1/3
<b>THE WORLD AND ITS COMMERCE.</b> In crown 8vo, cloth, 228 pp., with 34 maps.	Net	1/8
<b>THE ELEMENTS OF COMMERCIAL GEOGRAPHY.</b> By C. H. GRANT, M.Sc., F.R.Met.Soc. In crown 8vo, cloth, 140 pp.	Net	2/-
<b>COMMERCIAL GEOGRAPHY OF THE BRITISH ISLES.</b> In crown 8vo, cloth, 150 pp., with 34 coloured maps and plates, three black and white maps, and other illustrations	Net	2/-
<b>COMMERCIAL GEOGRAPHY OF THE BRITISH EMPIRE ABROAD AND FOREIGN COUNTRIES.</b> In crown 8vo, cloth, 205 pp., with 35 coloured maps and plates, 11 black and white maps, and end-paper maps	Net	2/-
<b>COMMERCIAL GEOGRAPHY OF THE WORLD.</b> In crown 8vo, cloth, 350 pp., with about 60 maps and plates	Net	2/6

**EXAMINATION NOTES ON COMMERCIAL GEOGRAPHY.** By W. P. RUTTER, M.Com. Size 6½ in. by 4½ in., cloth, 120 pp. Net 1/6  
**COMMERCIAL ATLAS OF THE WORLD.** In crown 4to, cloth, 120 pp., 58 maps and explanatory text. Net 2/6  
**ECONOMIC GEOGRAPHY.** (See "Economics" below.)

## COMMERCIAL HISTORY

**THE ELEMENTS OF COMMERCIAL HISTORY.** By J. H. HALL, M.A., B.Com. In crown 8vo, cloth, 120 pp. Net 2/6  
**COMMERCIAL HISTORY.** By J. H. HALL, M.A., B.Com. In crown 8vo, cloth, 120 pp. Net 2/6  
**ECONOMIC HISTORY.** (See "Economics" below.)

## ECONOMICS

**THE ELEMENTS OF POLITICAL ECONOMY.** By H. HALL, B.A. In crown 8vo, cloth, 140 pp. Net 2/6  
**GUIDE TO POLITICAL ECONOMY.** By F. H. SPENCER, D.S. In crown 8vo, cloth gilt, 232 pp. Net 3/6  
**OUTLINES OF THE ECONOMIC HISTORY OF ENGLAND: A Study in Social Development.** By H. O. MERFIDIN, M.A., B.Litt. In demy 8vo, cloth gilt, 376 pp. Net 6/-  
**ECONOMIC GEOGRAPHY.** By JOHN McFARLANE, M.A., M.Com. In demy 8vo, cloth gilt, 568 pp., 18 illustrations. Net 8/6  
**THE HISTORY AND ECONOMICS OF TRANSPORT.** By A. W. KIRKALDY, M.A., B.Litt. (Oxford), M.Com. (Bristol), and A. DUDLEY EVANS. In demy 8vo, cloth gilt, 350 pp. Net 7/8  
**DICTIONARY OF ECONOMIC AND BANKING TERMS.** By W. J. WESTON, M.A., B.Sc. and A. CREW, *Barrister-at-Law*. In crown 8vo, cloth gilt, 150 pp. Net 2/6  
**ECONOMICS FOR BUSINESS MEN.** By W. J. WESTON, M.A., B.Sc. (Lond.). In crown 8vo, 130 pp., cloth. Net 2/-  
**THE ECONOMICS OF TELEGRAPHS AND TELEPHONES.** By JOHN LEE, M.A. In crown 8vo, cloth gilt, 92 pp. Net 2/6  
**OUTLINES OF LOCAL GOVERNMENT.** By JOHN J. CLARK, M.A., F.S.S. In crown 8vo, 83 pp. Net 1/-  
**OUTLINES OF CENTRAL GOVERNMENT.** By the same Author. In crown 8vo, 90 pp. Net 1/-

## BANKING AND FINANCE

**THE ELEMENTS OF BANKING.** By J. P. GANDY. In crown 8vo, cloth, 140 pp. Net 2/-  
**BANK ORGANIZATION, MANAGEMENT, AND ACCOUNTS.** By J. F. DAVIS, M.A., D.Lit., I.L.B. (Lond.). In demy 8vo, cloth gilt, 165 pp., with forms. Net 5/-  
**MONEY, EXCHANGE, AND BANKING.** In their Practical, Theoretical, and Legal Aspects. By H. T. EASTON, A.I.B. Second Edition, Revised. In demy 8vo, cloth, 312 pp. Net 6/-  
**PRACTICAL BANKING.** By J. F. G. BAGSHAW. With Chapters on The Principles of Currency, by C. F. HANNAFORO, A.I.B., and Bank Book-keeping, by W. H. PRATT. In demy 8vo, cloth gilt, about 400 pp. Net 6/-  
**BANKERS' SECURITIES AGAINST ADVANCES.** By LAWRENCE A. FOGG, Cert. A.I.B. In demy 8vo, cloth gilt, 123 pp. Net 5/-  
**FOREIGN EXCHANGE, A PRIMER OF.** By W. F. SPALDING. In crown 8vo, cloth, 108 pp. Net 3/6  
**FOREIGN EXCHANGE AND FOREIGN BILLS IN THEORY AND IN PRACTICE.** By W. F. SPALDING, Cert. A.I.B. In demy 8vo, cloth gilt, 227 pp. Net 7/6  
**EASTERN EXCHANGE.** By W. F. SPALDING. In demy 8vo, cloth, 375 pp., illustrated. Net 12/6  
**TALKS ON BANKING TO BANK CLERKS.** By H. E. EVANS. In crown 8vo, cloth. Net 2/6  
**SIMPLE INTEREST TABLES.** By WILLIAM SCHOOLING. In crown 4to, cloth gilt. Net 21/-

## INSURANCE

**THE ELEMENTS OF INSURANCE.** By J. ALFREO EKE. In crown 8vo, cloth, 40 pp. Net 1/-  
**INSURANCE.** By C. E. YOUNG, B.A., F.R.A.S. A complete and practical exposition. With sections on Workmen's Compensation Insurance, by W. R. STRONG, F.I.A., and The National Insurance Scheme, by YVYVAN MARR, F.F.A., F.I.A. Third Edition. Revised and Enlarged. In demy 8vo, cloth gilt, 440 pp. Net 10/6

<b>GUIDE TO LIFE ASSURANCE.</b> By S. G. LEIGH, F.I.A. In crown 8vo, cloth gilt, 102 pp.	Net	2/6
<b>INSURANCE OFFICE ORGANIZATION, MANAGEMENT, AND ACCOUNTS.</b> By E. E. YOUNG, B.A., F.R.A.S., and RICHARD MASTERS, A.C.A. Second Edition, Revised. In demy 8vo, cloth gilt, 146 pp.	Net	5/-
<b>GUIDE TO MARINE INSURANCE.</b> By HENRY KEATE. In crown 8vo, cloth gilt, 201 pp.	Net	2/6
<b>THE PRINCIPLES OF MARINE LAW.</b> (See p. 11.)		

## SHIPPING

<b>SHIPPING.</b> By A. HALL and F. HEYWOOD. In crown 8vo, cloth, 136 pp.	Net	2/-
<b>SHIPPING OFFICE ORGANIZATION, MANAGEMENT, AND ACCOUNTS.</b> By ALFRED CALVERT. In demy 8vo, cloth gilt, 203 pp.	Net	4/-
<b>THE EXPORTER'S HANDBOOK AND GLOSSARY.</b> By F. M. DUDEN. With Foreword by W. EGLINGTON. In demy 8vo, cloth gilt, 254 pp.	Net	3/-
<b>CONSULAR REQUIREMENTS FOR EXPORTERS AND SHIPPERS TO ALL PARTS OF THE WORLD.</b> By J. S. NOWERY. In crown 8vo, cloth, 82 pp.	Net	2/6
<b>CASE AND FREIGHT COSTS.</b> The principles of calculation relating to the cost of, and freight out, sea or commercial cases. By A. V. E. CROSFIELD. In crown 8vo, cloth, 62 pp.	Net	2/-
<b>HOW TO DO BUSINESS WITH RUSSIA.</b> By C. E. W. PETERSSON and W. BARNES STEVENI. In demy 8vo, cloth, 200 pp.	Net	5/-

## SECRETARIAL WORK

<b>COMPANY SECRETARIAL WORK.</b> By E. MARTIN, F.C.I.S. In crown 8vo, cloth, 154 pp.	Net	1/6
<b>GUIDE TO COMPANY SECRETARIAL WORK.</b> By O. OLDHAM, A.C.I.S. In crown 8vo, cloth gilt, 256 pp.	Net	3/6
<b>THE COMPANY SECRETARY'S VADE MECUM.</b> Edited by PHILIP TOVEY, F.C.I.S. Second Edition, Enlarged and Revised. In foolscap 8vo, cloth, 247 pp.	Net	2/-
<b>GUIDE FOR THE COMPANY SECRETARY.</b> By ARTHUR COLES, F.C.I.S. Illustrated with 75 facsimile forms. Second Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 432 pp.	Net	6/-
<b>SECRETARY'S HANDBOOK.</b> Edited by HERBERT E. BLAIN. In demy 8vo, cloth gilt, 168 pp.	Net	5/-
<b>THE CHAIRMAN'S MANUAL.</b> By GURDON PALIN, of Gray's Inn, Barrister-at-Law, and ERNEST MARTIN, F.C.I.S. In crown 8vo, cloth gilt, 192 pp.	Net	3/6
<b>PROSPECTUSES: HOW TO READ AND UNDERSTAND THEM.</b> By PHILIP TOVEY, F.C.I.S. In demy 8vo, cloth gilt, 109 pp.	Net	2/6
<b>OUTLINES OF TRANSFER PROCEDURE IN CONNECTION WITH STOCKS, SHARES, AND DEBENTURES OF JOINT STOCK COMPANIES.</b> By F. D. HEAD, B.A. (Oxon), of Lincoln's Inn, Barrister-at-Law. In demy 8vo, cloth gilt, 112 pp.	Net	2/6
<b>THE TRANSFER OF STOCKS, SHARES, AND OTHER MARKETABLE SECURITIES.</b> A Manual of the Law and Practice. By F. D. HEAD, B.A. (Oxon). Second Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 220 pp.	Net	5/-
<b>WHAT IS THE VALUE OF A SHARE?</b> By D. W. ROSSITER. In demy 8vo, cloth, 20 pp.	Net	2/6
<b>HOW TO TAKE MINUTES.</b> Edited by E. MARTIN, F.C.I.S. Second Edition, Enlarged and Revised. In demy 8vo, cloth, 126 pp.	Net	2/6
<b>DICTIONARY OF SECRETARIAL LAW AND PRACTICE.</b> A comprehensive Encyclopædia of information and direction on all matters connected with the work of a Company Secretary. Fully illustrated with the necessary forms and documents. With sections on special branches of Secretarial Work. With contributions by nearly 40 eminent authorities. Edited by PHILIP TOVEY, F.C.I.S. In one vol., half leather gilt, 1011 pp. Third Edition, Revised and Enlarged.	Net	35/-
<b>FACSIMILE COMPANY FORMS.</b> (See p. 4.)		
<b>COMPANY ACCOUNTS.</b> (See p. 3.)		
<b>COMPANY LAW.</b> (See p. 11.)		

## INCOME TAX

<b>PRACTICAL INCOME TAX.</b> A Guide to the Preparation of Income Tax Returns. By W. E. SWELLING. In crown 8vo, cloth, 136 pp.	Net	2/6
<b>INCOME TAX AND SUPER-TAX PRACTICE.</b> Including a Dictionary of Income Tax and specimen returns, showing the effect of recent enactments down to the Finance Act, 1918, and Decisions in the Courts. By W. E. SWELLING. Third Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 518 pp.	Net	15/-

- COAL MINES EXCESS PAYMENTS.** Guarantee Payments and Levies for Closed Mines. Deals with the Agreement entered into between the Coal Controller and the Colliery Owners. By W. E. SNELLING. In demy 8vo, cloth gilt, 180 pp. . . . Net 12/6
- INCOME TAX AND SUPER-TAX LAW AND CASES.** Including the Finance Act, 1918. With an Analysis of the Schedules, Guide to Income Tax Law, and Notes on Land Tax. By W. E. SNELLING. Third Edition, Revised. In demy 8vo, cloth gilt, 482 pp. . . . Net 12/6
- EXCESS PROFITS (including Excess Mineral Rights) DUTY, and Levies under the Munitions of War Acts.** Incorporating the Provisions of the Income Tax Acts made applicable by Statute and by Regulation, also the Regulations of the Commissioners of Inland Revenue. By W. E. SNELLING. Fourth Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 422 pp. . . . Net 12/6

## BUSINESS ORGANIZATION AND MANAGEMENT

- OFFICE ORGANIZATION AND MANAGEMENT. INCLUDING SECRETARIAL WORK.** By LAWRENCE R. DICKSEE, M.Com., F.C.A., and H. E. BLAIN. Fourth Edition, Revised. In demy 8vo, cloth gilt, 306 pp. . . . Net 7/6
- MUNICIPAL OFFICE ORGANIZATION AND MANAGEMENT.** A comprehensive Manual of information and direction on matters connected with the work of Officials of Municipalities. Edited by W. BATISON, F.C.A., F.S.A.A. In crown 4to, half leather gilt, with 250 forms, diagrams, etc., 503 pp. . . . Net 25/-
- COUNTING-HOUSE AND FACTORY ORGANIZATION.** By J. GILMOUR WILLIAMSON. In demy 8vo, cloth gilt, 182 pp. . . . Net 6/-
- SOLICITORS' OFFICE ORGANIZATION, MANAGEMENT, AND ACCOUNTS.** By E. A. COLE and H. W. H. ROBINS. In demy 8vo, cloth gilt, 176 pp., with numerous forms . . . Net 5/-
- COLLIERY OFFICE ORGANIZATION AND ACCOUNTS.** By J. W. INNES, F.C.A., and T. COLIN CAMPBELL, F.C.I. In demy 8vo, cloth gilt, 135 pp. . . . Net 6/-
- CLUBS AND THEIR MANAGEMENT.** By FRANCIS W. PAXLEY, F.C.A. *Of the Middle Temple, Barrister-at-Law.* In demy 8vo, cloth gilt, 240 pp. . . . Net 7/6
- DRAPERY BUSINESS ORGANIZATION, MANAGEMENT AND ACCOUNTS.** By J. ERNEST BAYLEY. In demy 8vo, cloth gilt, 302 pp. . . . Net 6/-
- GROCERY BUSINESS, ORGANISATION AND MANAGEMENT.** By C. L. T. BEFCHING and ARTHUR SMART. Second Edition. In demy 8vo, cloth, 160 pp. . . . Net 6/-
- INDUSTRIAL TRAFFIC MANAGEMENT.** By GEO. B. LINDSEY. With a Foreword by C. E. MURGRAVE. In demy 8vo, cloth gilt, 260 pp. . . . Net 7/6
- SHIPPING ORGANIZATION, MANAGEMENT AND ACCOUNTS.** (See p. 7.)
- INSURANCE OFFICE ORGANIZATION, MANAGEMENT AND ACCOUNTS.** (See p. 7.)
- BANK ORGANIZATION AND MANAGEMENT.** (See p. 6.)
- STOCKBROKERS' OFFICE ORGANIZATION, MANAGEMENT AND ACCOUNTS.** (See p. 10.)
- THE CARD INDEX SYSTEM.** Its Principles, Uses, Operation, and Component Parts. In crown 8vo, cloth, 100 pp. . . . Net 1/6
- FILING SYSTEMS.** Their Principles and Their Application to Modern Office Requirements. By E. A. COLE. In crown 8vo, cloth gilt, 200 pp. . . . Net 2/6
- A MANUAL OF DUPLICATING.** By W. DESSBOROUGH. In demy 8vo, cloth, 90 pp. . . . Net 2/-

## ADVERTISING AND SALESMANSHIP

- ADVERTISING.** By HOWARD BRIDGEWATER. In crown 8vo, cloth, 120 pp. . . . Net 1/6
- ADS. AND SALES.** By HERBERT N. CANNON. In demy 8vo, cloth, 167 pp. . . . Net 7/6
- THE THEORY AND PRACTICE OF ADVERTISING.** By W. DILL SCOTT, Ph.D. In large crown 8vo, cloth, 61 illustrations . . . Net 7/6
- ADVERTISING AS A BUSINESS FORCE.** By P. T. CHERINGTON. In demy 8vo, cloth gilt, 586 pp. . . . Net 7/6
- THE PRINCIPLES OF ADVERTISING ARRANGEMENT.** By F. A. PARSONS. Size 7 in. by 10½ in., cloth, 128 pp., with many illustrations . . . Net 8/-
- THE NEW BUSINESS.** By HARRY TIPPER. In demy 8vo, cloth gilt, 406 pp. . . . Net 8/6
- THE CRAFT OF SILENT SALESMANSHIP.** A Guide to Advertisement Construction. By C. MAXWELL TREGURTHA and J. W. FRINGS. Foreword by T. SWINBORNE SHELDRAKE. Size 6½ in. by 9½ in., cloth, 98 pp., with illustrations . . . Net 5/-
- THE PSYCHOLOGY OF ADVERTISING.** By W. DILL SCOTT, Ph.D. In demy 8vo, with 67 illustrations . . . Net 7/-
- SALESMANSHIP.** By W. A. CORBION and G. E. GRIMSDALE. In crown 8vo, cloth, 786 pp. . . . Net 2/6
- PRACTICAL SALESMANSHIP.** By N. C. FOWLER, assisted by 29 expert Salesmen, etc. In crown 8vo, cloth, 337 pp. . . . Net 5/-
- COMMERCIAL TRAVELLING.** By ALBERT F. BULL. In crown 8vo, cloth gilt, 172 pp. . . . Net 2/6

# BUSINESS HANDBOOKS AND WORKS OF REFERENCE

- COMMERCIAL ENCYCLOPAEDIA AND DICTIONARY OF BUSINESS.** Edited by J. A. SLATER, B.A., LL.B. (Lond.), *Barrister-at-Law*. Assisted by about 50 specialists as contributors. A reliable and comprehensive work of reference on all commercial subjects, specially written for the busy merchant, the commercial student, and the modern man of affairs. With numerous maps, illustrations, facsimile business forms and legal documents, diagrams, etc. In 4 vols., large crown 4to (each about 450 pp.), cloth gilt. . . . . Net 72  
Half leather gilt. . . . . Net 12 12s. 6d.
- COMMERCIAL SELF-EDUCATOR.** A comprehensive guide to business specially designed for commercial students, clerks, and teachers. Edited by ROBERT W. HOLLAND, M.A., M.Sc., LL.D. Assisted by upwards of 40 Specialists as contributors. With many maps, illustrations, documents, Diagrams, etc. Complete in 2 vols., crown 4to cloth gilt, about 600 pp., combed edges. . . . . Net 18/-
- BUSINESS MAN'S GUIDE.** Edited by J. A. SLATER, B.A., LL.B. Seventh Edition, Revised. In crown 8vo, cloth, 520 pp. . . . . Net 5/-
- PUBLIC MAN'S GUIDE.** Edited by J. A. SLATER, B.A., LL.B. (Lond.). A Handbook for all who take an interest in questions of the day. In crown 8vo, cloth gilt, 444 pp. . . . . Net 3/6
- LECTURES ON BRITISH COMMERCE, INCLUDING FINANCE, INSURANCE, BUSINESS AND INDUSTRY.** By the RT. HON. FREDERICK HUTH JACKSON, G. ARMITAGE-SMITH, M.A., D.Litt., ROBERT BRUCE, C.B., . . . In demy 8vo, cloth gilt, 295 pp. . . . . Net 7/6
- THE MONEY AND THE STOCK AND SHARE MARKETS.** By EMIL DAVIES. In crown 8vo, cloth, 124 pp. . . . . Net 1/6
- THE EVOLUTION OF THE MONEY MARKET (1385-1915).** An Historical and Analytical Study of the Rise and Development of Finance as a Centralized, Co-ordinated Force. By ELLIS T. POWELL, LL.B. (Lond.), D.Sc. (Econ., Lond.). In demy 8vo, cloth gilt, 748 pp. . . . . Net 10/6
- THE HISTORY, LAW, AND PRACTICE OF THE STOCK EXCHANGE.** By A. P. FOLEY, B.A., *Barrister-at-Law*, and F. H. CARRUTHERS GOULD of the *Stock Exchange*. Second Edition, Revised. In demy 8vo, cloth gilt, 348 pp. . . . . Net 6/-
- STOCKBROKERS' OFFICE ORGANIZATION, MANAGEMENT AND ACCOUNTS.** By J. E. DAY. In demy 8vo, cloth gilt, 242 pp. . . . . Net 7/6
- DICTIONARY OF THE WORLD'S COMMERCIAL PRODUCTS.** By J. A. SLATER, B.A., LL.B. (Lond.). Second Edition, Revised. In demy 8vo, cloth, 170 pp. . . . . Net 3/6
- TELEGRAPH CIPHERS.** A condensed vocabulary of 101,000,000 pronounceable artificial words, all of ten letters. By A. W. E. CROSFIELD. Size 12 in. by 12 in., cloth. . . . . Net 21/-
- DISCOUNT, COMMISSION, AND BROKERAGE TABLES.** By ERNEST HEAVINGHAM. Size 3 in. by 4 1/2 in., cloth, 160 pp. . . . . Net 1/6
- BUSINESS TERMS, PHRASES, AND ABBREVIATIONS.** Fourth Edition, Revised and Enlarged. In crown 8vo, cloth, 280 pp. . . . . Net 3/2
- MERCANTILE TERMS AND ABBREVIATIONS.** Containing over 1,000 terms and 500 abbreviations used in commerce, with definitions. Size 3 in. by 4 1/2 in., cloth, 126 pp. . . . . Net 1/6
- TRAMWAY RATING VALUATIONS AND INCOME TAX ASSESSMENTS.** By F. A. MITCHESON. In demy 8vo, cloth gilt. . . . . Net 2/6
- THE TRADER'S GUIDE TO COUNTY COURT PROCEDURE.** In foolscap 8vo, cloth, 112 pp. . . . . Net 1/6
- A COMPLETE GUIDE TO THE IMPROVEMENT OF THE MEMORY.** By the late Rev. J. H. BACON. In foolscap 8vo, cloth, 118 pp. . . . . Net 1/6
- HOW TO STUDY AND REMEMBER.** By B. J. DAVIES. Third Edition. In crown 8vo. . . . . Net 6d.
- THE NEW REGISTER-ACCOUNT BOOK.** Compiled by H. R. STANILAND, P.C.T., A.C.T.S. Size 9 in. by 5 1/2 in., 50 pp., specially ruled, qr. cloth. . . . . Net 3/-
- TRADER'S HANDBOOKS.** In crown 8vo, cloth, 280 pp. . . . . Each Net 4/6
- Drapery and Drapers' Accounts. By RICHARD BEYNON.  
Grocery and Grocers' Accounts. By W. F. TUPMAN.  
Ironmongery and Ironmongers' Accounts. By S. W. FRANCIS.

## COMMON COMMODITIES OF COMMERCE AND INDUSTRIES

- Each book in crown 8vo, cloth, with many illustrations, about 150 pp. Net 2/6
- TEA.** From Grower to Consumer. By A. LEBFETSON.
- COFFEE.** From Grower to Consumer. By B. B. KEABLE.
- SUGAR, Cane and Beet.** By GEO. MARTINEAU, C.B.
- OILS.** Animal, Vegetable, Essential, and Mineral. By C. AINSWORTH MITCHELL, B.A., F.I.C.
- WHEAT AND ITS PRODUCTS.** By ANDREW MILLAR.
- RUBBER.** Production and Utilisation of the Raw Product. By C. BRADLE and H. P. STEVENS, M.A., Ph.D., F.I.C.
- IRON AND STEEL.** Their Production and Manufacture. By C. HODGKINSON.
- COPPER.** From the Ore to the Metal. By H. K. PICARD, Assoc. Royal School of Mines, Mem. Inst. of Min. and Met.
- COAL.** Its Origin, Method of Working, and Preparation for the Market. By FRANCIS H. WILSON, M.Inst.M.E.
- TIMBER.** From the Forest to its Use in Commerce. By W. BULLOCK.
- LEATHER.** From the Raw Material to the Finished Product. By K. J. ADCOCK.
- COTTON.** From the Raw Material to the Finished Product. By R. J. PFAKE.
- SILK.** Its Production and Manufacture. By LUTHER HOOPER.
- WOOL.** From the Raw Material to the Finished Product. By J. A. HUNTER.
- LINEN.** From the Field to the Finished Product. By ALFRED S. MOORE.
- TOBACCO.** From Grower to Smoker. By A. E. TANNER.
- CLAYS AND CLAY PRODUCTS.** By ALFRED B. SEARLE.
- PAPER.** Its History, Sources, and Production. By H. A. MADDOX, Silver Medallist, Paper-making, 1900.
- SOAP.** Its Composition, Manufacture, and Properties. By WILLIAM A. SIMMONS, B.Sc. (Lond.), F.C.S.
- GLASS AND GLASS MAKING.** By P. MARSON.
- GUMS AND RESINS.** Their Occurrence, Properties, and Uses. By ERNEST J. PARRY, B.Sc., F.I.C., F.C.S.
- THE MOTOR INDUSTRY.** By HORACE WYATT, B.A.
- THE BOOT AND SHOE INDUSTRY.** By J. S. HARDING.
- GAS AND GAS MAKING.** By W. H. V. WEBBER.
- FURNITURE.** By H. E. BINSTED.
- COAL TAR AND SOME OF ITS PRODUCTS.** By A. R. WARNES, F.C.S., A.I.Mech.E.
- PETROLEUM.** By ALBERT LIDGETT, Editor of the "Petroleum Times."
- SALT AND THE SALT INDUSTRY.** By A. F. CALVERT.
- KNITTED FABRICS.** By J. CHAMBERLAIN and J. H. QUILTER.
- ZINC.** By T. E. LONES.

## LAW

- THE ELEMENTS OF COMMERCIAL LAW.** By J. H. DOUGLAS, LL.B. (Lond.). In crown 8vo, cloth, 128 pp. Net 2/-
- THE COMMERCIAL LAW OF ENGLAND.** By J. A. SLATER, B.A., LL.B. (Lond.). In crown 8vo, cloth, 252 pp. Seventh Edition. Net 3/6
- THE LAW OF CONTRACT.** By R. W. HOLLAND, M.A., M.Sc., LL.D. *Of the Middle Temple, Barrister-at-Law.* In foolscap 8vo, cloth, 120 pp. Net 1/6
- QUESTIONS AND ANSWERS IN COMMERCIAL LAW.** By J. WELLS THATCHER, *Barrister-at-Law.* In crown 8vo, cloth gilt, 172 pp. Net 2/6
- EXAMINATION NOTES ON COMMERCIAL LAW.** By R. W. HOLLAND, M.A., M.Sc., LL.D. Cloth, 64 in. by 3 1/2 in., 56 pp. Net 1/-
- ELEMENTARY LAW.** By E. A. COPE. In crown 8vo, cloth, 228 pp. Net 2/6
- LEGAL TERMS, PHRASES, AND ABBREVIATIONS.** By E. A. COPE. Third Edition. In crown 8vo, cloth, 216 pp. Net 3/-
- SOLICITOR'S CLERK'S GUIDE.** An Introduction to the work of a solicitor's office; with a chapter on Costs. By the same Author. In crown 8vo, cloth gilt, 216 pp. Net 2/6
- CONVEYANCING.** By E. A. COPE. In crown 8vo, cloth, 206 pp. Net 2/6
- WILLS, EXECUTORS, AND TRUSTEES.** With a Chapter on Intestacy. By J. A. SLATER, B.A., LL.B. (Lond.). In foolscap 8vo, cloth, 122 pp. Net 1/6
- THE LAW RELATING TO TRADE CUSTOMS, MARKS, SECRETS, RESTRAINTS, AGENCIES, etc., etc.** By LAWRENCE DUCWORTH, *Barrister-at-Law.* In foolscap 8vo, cloth, 116 pp. Net 1/6
- MERCANTILE LAW.** By J. A. SLATER, B.A., LL.B. (Lond.). In demy 8vo, cloth, 464 pp. Fourth Edition. Net 7/6

<b>BILLS, CHEQUES, AND NOTES.</b> By J. A. SLATER, B.A., LL.B. Third Edition, in demy 8vo, cloth gilt, 214 pp.	Net	6/-
<b>PRINCIPLES OF MARINE LAW.</b> By LAWRENCE DUCKWORTH. Third Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 400 pp.	Net	7/6
<b>OUTLINES OF COMPANY LAW.</b> By F. D. HEAD, B.A. (Oxon.). In demy 8vo, cloth, 100 pp.	Net	2/-
<b>GUIDE TO COMPANY LAW.</b> By R. W. HOLLAND, M.A., M.Sc., LL.D. In crown 8vo, cloth gilt, 203 pp.	Net	2/6
<b>EXAMINATION NOTES ON COMPANY LAW.</b> By R. W. HOLLAND, M.A., M.Sc., LL.D. Cloth, 6½ in. by 3½ in., 50 pp.	Net	1/-
<b>COMPANIES AND COMPANY LAW.</b> Together with the Companies (Consolidation) Act, 1908, and the Act of 1913. By A. C. CONNELL, LL.B. (Lond.). Second Edition, Revised. In demy 8vo, cloth gilt, 348 pp.	Net	6/-
<b>COMPANY CASE LAW.</b> A digest of leading decisions. By F. D. HEAD, B.A. (Oxon.). In demy 8vo, cloth gilt, 314 pp.	Net	7/6
<b>THE STUDENT'S GUIDE TO RAILWAY LAW.</b> By ARTHUR E. CHAPMAN, M.A., LL.D. (Camb.). In crown 8vo, cloth gilt, 200 pp.	Net	2/6
<b>RAILWAY (REBATES) CASE LAW.</b> By GEO. B. LISSENDEN. In demy 8vo, cloth gilt, 450 pp.	Net	10/6
<b>THE LAW RELATING TO SECRET COMMISSIONS AND BRIBES (CHRISTMAS BOXES, GRATUITIES, TIPS, etc.).</b> The Prevention of Corruption Act, 1906. By ALBERT CREW, of Gray's Inn, and the South-Eastern Circuit, Barrister-at-Law. In demy 8vo, cloth gilt, 168 pp.	Net	5/-
<b>INHABITED HOUSE DUTY.</b> By W. F. SMELLING. In demy 8vo, cloth gilt, 357 pp.	Net	12/6
<b>THE LAW OF CARRIAGE.</b> By J. E. R. STEPHENS, B.A., of the Middle Temple, Barrister-at-Law. In demy 8vo, cloth gilt, 340 pp.	Net	5/-
<b>THE LAW RELATING TO THE CARRIAGE BY LAND OF PASSENGERS, ANIMALS, AND GOODS.</b> By S. W. CLARKE, of the Middle Temple, Barrister-at-Law. In demy 8vo, cloth gilt, 350 pp.	Net	7/6
<b>THE STUDENT'S GUIDE TO BANKRUPTCY LAW AND WINDING UP OF COMPANIES.</b> By F. PORTER FAUSSET, B.A., LL.B., Barrister-at-Law. In crown 8vo, cloth gilt, 196 pp.	Net	2/6
<b>BANKRUPTCY, DEEDS OF ARRANGEMENT AND BILLS OF SALE.</b> By W. VALENTINE BALL, M.A., and G. MILLS, B.A., Barristers-at-Law. Third Edition, Revised and Enlarged. In demy 8vo, cloth gilt, 364 pp.	Net	5/-
<b>FARM LAW.</b> By M. G. JOHNSON. In demy 8vo, cloth gilt, 166 pp.	Net	3/6
<b>GUIDE TO THE LAW OF LICENSING.</b> The Handbook for all Licence Holders. By J. WELLS THATCHER. In demy 8vo, cloth gilt, 196 pp.	Net	5/-
<b>LAW OF REPAIRS AND DILAPIDATIONS.</b> A Handbook for Students and Practitioners. By T. CATO WORSFOLD, M.A., LL.D. In crown 8vo, cloth gilt, 104 pp.	Net	3/6
<b>THE LAW OF EVIDENCE.</b> A Handbook for Students and Practitioners. By W. NEUBARD HIBBERT, LL.D. (Lond.), Barrister-at-Law of the Middle Temple. In crown 8vo, cloth gilt, 144 pp. Second Edition, Revised.	Net	5/-
<b>THE LAW OF PROCEDURE.</b> A Handbook for Students and Practitioners. By the same author. In demy 8vo, cloth gilt, 122 pp.	Net	5/-
<b>HANDBOOK OF LOCAL GOVERNMENT LAW.</b> By J. WELLS THATCHER. In large crown 8vo, cloth gilt, 250 pp.	Net	3/6
<b>THE LAW RELATING TO THE CHILD: ITS PROTECTION, EDUCATION, AND EMPLOYMENT.</b> By R. W. HOLLAND, M.A., M.Sc., LL.D. In demy 8vo, cloth gilt, 166 pp.	Net	5/-
<b>INCOME TAX AND SUPER-TAX LAW AND CASES.</b> (See p. 8.)	Net	

## FOREIGN LANGUAGES

### FRENCH

<b>A CHILD'S FIRST STEPS IN FRENCH.</b> By A. VIZETELLY. An elementary French reader with vocabulary. Illustrated. In crown 8vo, limp cloth, 64 pp.	Net	1/-
<b>FRENCH COURSE. Part I.</b> In crown 8vo, 120 pp., limp cloth.	Net	1/3
<b>FRENCH COURSE. Part II.</b> (In preparation)	Net	
<b>PROGRESSIVE FRENCH GRAMMAR.</b> By Dr. F. A. HEDGECOCK, M.A. (Also in 2 vols.: Part I, 8/8 net; Part II, 2/6 net)	Net	2/6
<b>Key</b>	Net	3/6
<b>EASY FRENCH CONVERSATIONAL SENTENCES.</b> In crown 8vo, 32 pp.	Net	6d.
<b>ADVANCED FRENCH CONVERSATIONAL EXERCISES.</b> In crown 8vo, 32 pp.	Net	6d.



<b>TOURISTS' VADE MECUM OF FRENCH COLLOQUIAL CONVERSATION.</b> Handy size for the pocket, cloth	Net	1/3
<b>FRENCH VOCABULARIES AND IDIOMATIC PHRASES.</b> By E. J. KEALEY, B.A. In crown 8vo, 151 pp.	Net	2/-
<b>GRADUATED LESSONS IN COMMERCIAL FRENCH.</b> By F. MARSDEN. In crown 8vo, cloth, 168 pp.	Net	2/-
<b>FRENCH-ENGLISH AND ENGLISH-FRENCH COMMERCIAL DICTIONARY.</b> By F. W. SMITH. In crown 8vo, cloth, 576 pp.	Net	7/6
<b>FRENCH RECITÉS: LE ROI LION ET SES GRANDS VASSAUX.</b> By F. W. M. DRAFFR, M.A., B. és L. In crown 8vo, limp cloth, 50 pp.	Net	3d.
<b>COMMERCIAL FRENCH GRAMMAR.</b> By F. W. M. DRAPER, M.A., B. és L. In crown 8vo, cloth gilt, 160 pp.	Net	2/6
<b>RAPID METHOD OF SIMPLIFIED FRENCH CONVERSATION.</b> By V. F. HIBBERO. In crown 8vo, cloth, 192 pp.	Net	3/-
<b>GRADUATED FRENCH-ENGLISH COMMERCIAL CORRESPONDENCE.</b> By MAURICE HENRY. In crown 8vo, 100 pp.	Net	2/-
<b>FRENCH BUSINESS LETTERS.</b> First Series. In crown 4to, 32 pp.	Net	3d.
<b>FRENCH BUSINESS LETTERS.</b> By A. H. BURNAARDT, Second Series. In crown 8vo, 48 pp.	Net	3d.
<b>COMMERCIAL CORRESPONDENCE IN FRENCH.</b> In crown 8vo, cloth, 240 pp.	Net	2/5
<b>MERCANTILE CORRESPONDENCE.</b> English-French. In crown 8vo, cloth 250 pp.	Net	2/6
<b>MODELS AND EXERCISES IN COMMERCIAL FRENCH.</b> By E. T. GRIFFITHS, M.A. In crown 8vo, cloth, 180 pp.	Net	2/6
<b>FRENCH COMMERCIAL PHRASES AND ABBREVIATIONS WITH TRANSLATION.</b> In crown 8vo, 32 pp.	Net	6d.
<b>FRENCH BUSINESS CONVERSATIONS AND INTERVIEWS.</b> In crown 8vo, 80 pp., limp cloth	Net	2/-
<b>READINGS IN COMMERCIAL FRENCH.</b> With Notes and Translations in English. In crown 8vo, cloth, 90 pp.	Net	1/-
<b>FRENCH COMMERCIAL READER.</b> In crown 8vo, cloth, 208 pp.	Net	2/6
<b>ENGLISH-FRENCH AND FRENCH-ENGLISH DICTIONARY OF BUSINESS WORDS AND TERMS.</b> Size 2 in. by 6 in., cloth, rounded corners, 540 pp.	Net	3/6
<b>VEST POCKET LIST OF ENDINGS OF FRENCH REGULAR AND AUXILIARY VERBS.</b> With Notes on the Participles and the Infinitive. Size 2½ in. by 1½ in. 48 pp.	Net	2d.

## GERMAN

<b>GERMAN COURSE. Part I.</b> 9d. net. Cloth	Net	1/-
<b>KEY TO GERMAN COURSE.</b> In crown 8vo	Net	1/6
<b>PRACTICAL GERMAN GRAMMAR.</b> In crown 8vo, 102 pp.	Net	2/5
<b>EASY LESSONS IN GERMAN.</b> By J. BITHFLL, M.A. In crown 8vo, cloth, 116 pp.	Net	1/3
<b>EASY GERMAN CONVERSATIONAL SENTENCES.</b> In crown 8vo, 32 pp.	Net	3d.
<b>ADVANCED GERMAN CONVERSATIONAL EXERCISES.</b> In crown 8vo, 32 pp.	Net	6d.
<b>TOURISTS' VADE MECUM OF GERMAN COLLOQUIAL CONVERSATION.</b> In crown 8vo, cloth	Net	1/3
<b>EXAMINATION NOTES ON GERMAN.</b> By A. HARGREAVES, M.A., Ph.D. Cloth, 64 in. by 3½ in., 56 pp.	Net	1/-
<b>GERMAN EXAMINATION PAPERS WITH MODEL ANSWERS.</b> In crown 8vo, 48 pp.	Net	6d.
<b>COMMERCIAL GERMAN GRAMMAR.</b> By J. BITHFLL, M.A. In crown 8vo, cloth gilt, 182 pp.	Net	2/6
<b>GERMAN BUSINESS INTERVIEWS.</b> Nos. 1 and 2. Each in crown 8vo, limp cloth. No. 1, 100 pp.; No. 2, 74 pp.	Net	1/6
<b>ELEMENTARY GERMAN CORRESPONDENCE.</b> By LEWIS MARSH, M.A. In crown 8vo, cloth, 143 pp.	Net	2/-
<b>COMMERCIAL CORRESPONDENCE IN GERMAN.</b> In crown 8vo, cloth, 240 pp.	Net	3/6
<b>MERCANTILE CORRESPONDENCE.</b> English-German. In crown 8vo, cloth, 250 pp.	Net	2/6
<b>GERMAN BUSINESS LETTERS.</b> First Series. In crown 8vo, 48 pp.	Net	6d.
<b>GERMAN BUSINESS LETTERS.</b> By G. ALDRIS. Second Series. In crown 8vo, 48 pp.	Net	6d.
<b>GRADUATED GERMAN-ENGLISH COMMERCIAL CORRESPONDENCE.</b> In crown 8vo, cloth	Net	2/6
<b>GERMAN COMMERCIAL PHRASES.</b> In crown 8vo, 32 pp.	Net	6d.
<b>GERMAN COMMERCIAL READER.</b> In crown 8vo, cloth, 208 pp.	Net	3/6
<b>READINGS IN COMMERCIAL GERMAN.</b> With Notes and Translations in English. In crown 8vo, cloth, 90 pp.	Net	1/-
<b>ENGLISH-GERMAN AND GERMAN-ENGLISH DICTIONARY OF BUSINESS WORDS AND TERMS.</b> Size 2 in. by 6 in., rounded corners, cloth, 440 pp.	Net	3/6

## SPANISH

EASY SPANISH CONVERSATIONAL SENTENCES. In crown 8vo, 32 pp. . .	Net	6d.
ADVANCED SPANISH CONVERSATIONAL EXERCISES. In crown 8vo, 32 pp. .	Net	6d.
TOURISTS' VADE MECUM OF SPANISH COLLOQUIAL CONVERSATION. Cloth	Net	1/8
EXAMINATION NOTES ON SPANISH. By ALFRED CALVERT. Cloth, 6½ in. by 3½ in., 56 pp.	Net	18
COMMERCIAL SPANISH GRAMMAR. By C. A. TOLEDANO. In crown 8vo, cloth gilt, 250 pp.	Net	4/8
	Key	2/-
SPANISH VERBS, Regular and Irregular. By G. R. MACDONALD. In crown 8vo, cloth, 180 pp.	Net	2/8
COMMERCIAL CORRESPONDENCE IN SPANISH. In crown 8vo, cloth, 240 pp.	Net	7/8
MANUAL OF SPANISH COMMERCIAL CORRESPONDENCE. By G. R. MACDONALD. In crown 8vo, cloth gilt, 328 pp.	Net	4/6
LESSONS IN SPANISH COMMERCIAL CORRESPONDENCE. By the same Author. In crown 8vo, cloth, 107 pp.	Net	2/-
SPANISH COMMERCIAL READER. By G. R. MACDONALD. In crown 8vo, cloth, 178 pp.	Net	2/8
READINGS IN COMMERCIAL SPANISH. With Notes and Translations in English. In crown 8vo, cloth, 90 pp.	Net	1/-
SPANISH BUSINESS LETTERS. First Series. In crown 8vo, 32 pp. . .	Net	6d.
SPANISH BUSINESS LETTERS. By E. MCCONNELL. Second Series. In crown 8vo, 48 pp.	Net	6d.
SPANISH COMMERCIAL PHRASES. With Abbreviations and Translation. In crown 8vo, 32 pp.	Net	6d.
SPANISH BUSINESS CONVERSATIONS AND INTERVIEWS. With Correspondence, Invoices, etc. In crown 8vo, 90 pp. limp cloth	Net	2/-
SPANISH-ENGLISH AND ENGLISH-SPANISH COMMERCIAL DICTIONARY. By G. R. MACDONALD. In crown 8vo, cloth gilt, 652 pp. .	Net	7/8

## ITALIAN

TOURISTS' VADE MECUM OF ITALIAN COLLOQUIAL CONVERSATION. cloth	Net	1/8
COMMERCIAL ITALIAN GRAMMAR. By LUIGI RICCI. In crown 8vo, cloth gilt, 154 pp.	Net	2/8
MERCANTILE CORRESPONDENCE. English-Italian. In crown 8vo, cloth, 250 pp.	Net	3/8
ITALIAN BUSINESS LETTERS. By A. VALGAMIGLI. In crown 8vo, 48 pp. .	Net	6d.

## MISCELLANEOUS

PRACTICAL PORTUGUESE GRAMMAR. By C. A. and A. TOLEDANO. In crown 8vo, cloth, 130 pp.	Net	5/-
MERCANTILE CORRESPONDENCE. English-Portuguese. In crown 8vo, cloth, 250 pp.	Net	3/8
LESSONS IN PORTUGUESE COMMERCIAL CORRESPONDENCE. By G. R. MACDONALD. In crown 8vo, cloth, 108 pp.	Net	2/-
DICTIONARY OF COMMERCIAL CORRESPONDENCE IN ENGLISH, FRENCH, GERMAN, SPANISH, ITALIAN, PORTUGUESE, AND RUSSIAN. Third Revised Edition. In demy 8vo, cloth, 718 pp.	Net	10/8
THE FOREIGN CORRESPONDENT. By EMIL DAVIES. In crown 8vo, cloth, 80 pp.	Net	1/8
COMMERCIAL TERMS IN FIVE LANGUAGES. Being about 1,000 terms and phrases used in commerce, with their equivalents in French, German, Spanish, and Italian. Size 3 in. by 4½ in., cloth, 118 pp.	Net	1/8

## PITMAN'S SHORTHAND

All books are in foolscap 8vo size unless otherwise stated.

### INSTRUCTION BOOKS

*Centenary Editions.*

PITMAN'S SHORTHAND TEACHER. An elementary work suited for self-instruction or class teaching	Net	6d.
KEY TO "PITMAN'S SHORTHAND TEACHER"	Net	6d.
PITMAN'S SHORTHAND PRIMERS. In three Books: Elementary, Intermediate, and Advanced	Each, 6d.	8d.

<b>PITMAN'S SHORTHAND READING LESSONS.</b> Nos. 1, 2 and 3. . . . .	Each	81.
<b>KEYS TO "PITMAN'S SHORTHAND READING LESSONS,"</b> Nos. 1, 2, and 3. . . . .	Each	3d.
<b>PITMAN'S SHORTHAND COPY BOOKS.</b> Nos. 1, 2, 3, and 4. An entirely new series covering the theory of the system. Foolscap 4to (8½ in. by 6¼ in.) . . . . .	Each	6d.
<b>PITMAN'S SHORTHAND DRILL EXERCISES.</b> . . . . .	Along	81.
<b>COMPEND OF PITMAN'S SHORTHAND.</b> . . . . .		21.
<b>PITMAN'S SHORTHAND INSTRUCTOR.</b> Complete Instruction in the System. Cloth . . . . .	Key, 1/8; cloth	4/-
<b>THE CENTENARY CHANGES IN PITMAN'S SHORTHAND.</b> In crown 8vo . . . . .		2/-
<b>SUMMARIES FROM "PITMAN'S SHORTHAND INSTRUCTOR."</b> Size, 2½ in. by 4 in. . . . .		1d.
<b>PITMAN'S SHORTHAND MANUAL.</b> Contains instruction in the Intermediate Style, with 500 Exercises . . . . .	Cloth	3d.
	Key	2/-
		2/6
<b>PITMAN'S SHORTHAND GRADUS.</b> Writing Exercises in ordinary print for <i>Manual</i> . . . . .		6d.
<b>PITMAN'S SHORTHAND REPORTER.</b> Containing instruction in the Advanced Style: with 52 Exercises . . . . .	Cloth	3d.
	Key	2/6
		3/-
<b>REPORTING EXERCISES.</b> Exercises on all the rules and contracted words. . . . .	Key	8d.
ordinary print, counted for dictation . . . . .		1/-
<b>PITMAN'S SHORTHAND CATECHISM.</b> In crown 8vo . . . . .		1/8
<b>PITMAN'S SHORTHAND WRITING EXERCISES AND EXAMINATION TESTS.</b> In crown 8vo, paper boards . . . . .		2/-
	Key	3/6
<b>EXAMINATION NOTES ON PITMAN'S SHORTHAND.</b> By H. W. B. WILSON. 8 in. by 3½ in., cloth . . . . .		1/8
<b>GRADED SHORTHAND READINGS.</b> . . . . .		
Elementary, with Key. In crown 8vo, oblong . . . . .		6d.
Intermediate, with Key. In crown 8vo, oblong . . . . .		8d.
Second Series . . . . .		3d.
Advanced, with Key. In crown 8vo, oblong . . . . .		8d.
<b>GRADUATED TESTS IN PITMAN'S SHORTHAND.</b> Illustrating all the rules in the Intermediate Style. In note-book form, post 8vo (6½ in. by 4½ in.), with ruled paper . . . . .		8d.
<b>PROGRESSIVE STUDIES IN PITMAN'S SHORTHAND.</b> . . . . .		1/-
<b>TALKS WITH SHORTHAND STUDENTS.</b> By JAMES HYNES . . . . .		1/-
<b>CHATS ABOUT PITMAN'S SHORTHAND.</b> By GEORGE BLETCHER . . . . .		1/-
<b>LECTURETTES ON PITMAN'S SHORTHAND.</b> By J. HYNES . . . . .		1/-
<b>PITMAN'S SHORTHAND RAPID COURSE.</b> A Series of Twenty Simple Lessons covering the whole of the system and specially adapted for business purposes. In crown 8vo . . . . .	Cloth	2/6
	Key	2/-
With Additional Exercises . . . . .		4/-
<b>PITMAN'S SHORTHAND RAPID COURSE, ADDITIONAL EXERCISES ON . . . . .</b>		8d.
<b>READING EXERCISES ON THE RAPID COURSE</b> (In Shorthand), crown 8vo, 62 pp. . . . .		1/-
<b>PITMAN'S SHORTHAND COMMERCIAL COURSE,</b> Specially adapted for commercial students . . . . .	Cloth	4/-
	Key, 2/-; Additional Exercises	1/-
<b>PITMAN'S EXERCISES IN BUSINESS SHORTHAND.</b> By A. BENJAMIN, I.P.S. (Hons.), F.C.Sp.T. . . . .		1/6

## GRAMMALOGUES AND CONTRACTIONS

<b>GRAMMALOGUES AND CONTRACTIONS.</b> For use in classes . . . . .		2d.
<b>VEST POCKET LIST OF GRAMMALOGUES AND CONTRACTIONS OF PITMAN'S SHORTHAND.</b> 2½ in. by 1½ in., limp cloth . . . . .		2d.
<b>EXERCISES ON THE GRAMMALOGUES AND CONTRACTIONS OF PITMAN'S SHORTHAND.</b> By J. F. C. GROW. In Shorthand, with Key. In crown 8vo, limp cloth . . . . .		8d.
<b>HOW TO PRACTISE AND MEMORIZE THE GRAMMALOGUES OF PITMAN'S SHORTHAND.</b> Compiled by J. J. GEORGE. Size 7½ in. by 5 in. . . . .		4d.

## SHORTHAND DICTIONARIES

<b>PITMAN'S ENGLISH AND SHORTHAND DICTIONARY.</b> In crown 8vo, cloth, 820 pp. . . . .		7/6
<b>PITMAN'S SHORTHAND DICTIONARY.</b> Crown 8vo (7½ in. by 5½ in.), 378 pp. Cloth . . . . .		8/-
<b>PITMAN'S POCKET SHORTHAND DICTIONARY.</b> Royal 32mo (3½ in. by 4½ in.). Cloth . . . . .		2/-
<b>PITMAN'S REPORTER'S ASSISTANT.</b> In crown 8vo, cloth . . . . .		2/6

## SHORTHAND PHRASE BOOKS, ETC.

<b>PHONOGRAPHIC PHRASE BOOK.</b>	1/6; Cloth	2/-
<b>SHORTHAND WRITERS' PHRASE BOOKS AND GUIDES.</b> Each in foolscap 8vo, Cloth		2/-
Electrical and Engineering, Railway, Estate Agents, etc., Printing and Publishing, Insurance, Banking, Stockbroking and Financial, Commercial, Legal, Municipal, Builders and Contractors, Shipping, Iron and Steel Trades, Civil Engineering, Naval and Military, Chemical and Drug.		
<b>MEDICAL REPORTING IN PITMAN'S SHORTHAND.</b> By H. DICKINSON. With an Introduction and Lists of Phraseograms, Outlines, and Abbreviations. In crown 8vo, cloth		3/-
<b>SHORTHAND CLERK'S GUIDE.</b> By VINCENT E. COLLINGS, A.C.I.S. In crown 8vo, cloth		1/8

## DICTATION AND SPEED PRACTICE BOOKS

<b>SPECIALISED CORRESPONDENCE BOOKS.</b> (1) The Chemical Trade. (2) The Paper Trade. (3) The Building Trade. In ordinary print	Each	6d.
<b>GRADUATED DICTATION BOOKS.</b> (1) Political Speeches. (2) Sermons. In ordinary print. In crown 8vo.	Each	4d.
<b>STUDENT'S PRACTICE BOOK.</b> In cr. 8vo, 241 pp		2/-
<b>GRADUATED DICTATION BOOKS.</b> (New Series) I and II.	Each	6d.
<b>GRADUATED COMMERCIAL LETTERS FOR DICTATION.</b> 84 in. by 6 in.		8d.
<b>REPORTING PRACTICE.</b> In crown 8vo, cloth		2/6
<b>PROGRESSIVE DICTATOR.</b> Third Edition. In crown 8vo, cloth		2/6
<b>SHORTHAND CANDIDATE'S DICTATION EXERCISES.</b> In crown 8vo, cloth		1/-
<b>COMMERCIAL DICTATION AND TYPEWRITING</b>		1/-
<b>SPEED TESTS AND GUIDE TO RAPID WRITING IN SHORTHAND.</b> In crown 8vo, cloth		2/-
<b>FIVE MINUTE SPEED TESTS.</b> With Introduction on Acquisition of Speed by P. P. JACKSON. In crown 8vo, cloth		2/-
<b>CUMULATIVE SPELLER AND SHORTHAND VOCABULARY.</b> By CHARL E. SMITH. In crown 8vo, paper boards		2/-
<b>POCKET DICTATION BOOKS.</b> Nos. 1, 2, 3, and 4. 2½ in. by 3½ in.	Each	2d.
<b>SPEED TRAINING IN PITMAN'S SHORTHAND.</b> By J. F. MARRINER		6d.
<b>ACQUISITION OF SPEED IN SHORTHAND.</b> By E. A. COPE. In ordinary print. In crown 8vo		8d.
<b>BROWN'S SHORT-CUTS IN SHORTHAND.</b> By GEORGE BROWN, F.I.P.S. In crown 8vo.		1/-
<b>THE STENOGRAPHIC EXPERT.</b> By W. B. BOTTOMS and W. F. SMART. In demy 8vo, cloth	Net	7/6
<b>SHORTHAND COMMERCIAL LETTER-WRITER.</b> Advanced Style	1/-; Key	6d.
<b>OFFICE WORK IN SHORTHAND.</b> Specimens of Legal and other Professional Work commonly dictated to Shorthand clerks, in the Advanced Style	1/3; Key	6d.
<b>COMMERCIAL CORRESPONDENCE IN SHORTHAND.</b> In crown 8vo, cloth		2/6
<b>BUSINESS CORRESPONDENCE IN SHORTHAND.</b> In the Advanced Style.	1/3; Key	10d.
<b>TRADE CORRESPONDENCE IN SHORTHAND.</b> In the Advanced Style.	1/3; Key	8d.
<b>MISCELLANEOUS CORRESPONDENCE IN PITMAN'S SHORTHAND.</b> First, Second, and Third Series. Advanced Style, with Keys in ordinary print. Each in crown 8vo, oblong. Limp cloth		1/4

## SHORTHAND READING BOOKS

	In the Elementary Style.		8d.
<b>ÆSOP'S FABLES</b>			8d.
<b>EASY READINGS.</b> With Key			8d.
<b>LEARNER'S SHORTHAND READER.</b> Illustrated.			8d.
<b>STIRRING TALES</b>			8d.
<b>PERILS OF THE BUSH AND OTHER STORIES</b>			8d.
	In the Intermediate Style.		8d.
<b>PITMAN'S PHONOGRAPHIC READER, No. 1.</b> With Key			2/-
<b>GULLIVER'S VOYAGE TO LILLIPUT.</b> By JONATHAN SWIFT. With Key. Cloth			1/2
<b>SUBMARINE X7 AND OTHER STORIES.</b> Illustrated			2/6
<b>THE VICAR OF WAKEFIELD.</b> By OLIVER GOLDSMITH. Illustrated.	2/-; Cloth		2/6
<b>TALES AND SKETCHES.</b> By WASHINGTON IRVING. With Key.	1/8; Cloth		2/-
<b>TALES OF ADVENTURE.</b> By various Authors			1/-
<b>THE RUNAWAY AIRSHIP AND OTHER STORIES.</b>			2/3
<b>THE SILVER SHIP OF MEXICO.</b> An abridgment of J. H. INGRAHAM'S Story			2/-
	No. I, 8d. No. II		8d.
<b>SELECT READINGS</b>			3/6
<b>THE BOOK OF PSALMS.</b> Bible Authorised Version. Cloth gilt, red edges			

**COMMERCIAL READERS IN SHORTHAND** (1) Commercial Institutions, (2) Commodities, (3) Leaders of Commerce, (4) Gateways of British Commerce, (5) Each

<b>PHONOGRAPHIC READER II.</b> With Key	In the Advanced Style.	Each	8d.
<b>A CHRISTMAS CAROL.</b> By CHARLES DICKENS.	173; Cloth		8d.
<b>TALES FROM DICKENS</b>	Cloth		1/9
<b>THE SIGN OF FOUR.</b> By SIR A. CONAN DOYLE	Cloth		2/-
<b>THE RETURN OF SHERLOCK HOLMES.</b> Vols. I, II and III	Each, cloth		2/-
<b>AROUND THE WORLD IN EIGHTY DAYS.</b> By JULES VERNE			2/-
<b>SELF-CULTURE.</b> By J. S. BLACKIE.	1/-; Cloth, 1/6, Key		2/6
<b>SELECTIONS FROM AMERICAN AUTHORS.</b> With Key			2/6
<b>THE LEGEND OF SLEEPY HOLLOW.</b> By WASHINGTON IRVING. With Key			8d.
<b>RIP VAN WINKLE.</b> By WASHINGTON IRVING. With Key			8d.
<b>A COURSE IN BUSINESS TRAINING.</b> By G. K. BUCKNALL, A.C.I.S. (Shorthand Edition), 288 pp.			3/-

**SHORTHAND TEACHERS' BOOKS**

<b>PITMAN'S SHORTHAND TEACHER'S HANDBOOK.</b> In crown 8vo, cloth		1/6
<b>NOTES OF LESSONS ON PITMAN'S SHORTHAND.</b> Size 8 in. by 3 1/2 in., cloth		2/6
<b>PREPARATION FOR A SHORTHAND TEACHER'S EXAMINATION.</b> Size 8 in. by 3 1/2 in., cloth		1/6
<b>A COMMENTARY ON PITMAN'S SHORTHAND.</b> By J. W. TAYLOR. In foolscap 8vo, cloth gilt, 448 pp.		4/6
<b>THE METHODS OF TEACHING SHORTHAND.</b> By E. J. McNAMARA, M.A. In crown 8vo, cloth		2/6
<b>CHART OF THE PHONOGRAPHIC ALPHABET.</b> 22 in. by 35 in.		2d.
	Mounted on canvas with rollers and varnished	3/6
<b>CHARTS ON PITMAN'S SHORTHAND.</b> Twenty large Charts (22 in. by 35 in.)	The Set	7/6
<b>DERIVATIVE AND COMPOUND WORDS IN PITMAN'S SHORTHAND</b> By H. W. B. Wilson. In foolscap 8vo		2/-
<b>HISTORY OF SHORTHAND.</b> By SIR ISAAC PITMAN. Fourth Edition, Revised. In crown 8vo, cloth	Net	5/-

**TYPEWRITING**

<b>THE JUNIOR TYPIST.</b> By ANNIE E. DAVIS. Demy 8vo, cloth	Net	1/6
<b>NEW COURSE IN TYPEWRITING.</b> By MRS. SMITH CLOUGH. Large post 4to		1/6
<b>PITMAN'S TYPEWRITER MANUAL.</b> Can be used with any machine. Sixth Edition. Large post 4to, cloth		6/-
<b>PITMAN'S TYPEWRITING EXAMPLES</b> for any machine—		
On cards, 48 examples, foolscap folio		3/-
In oblong note-book, for standing by the side of the machine		2/-
In note-book form, in covers		2/6
<b>PITMAN'S EXERCISES AND TESTS IN TYPEWRITING.</b> Foolscap folio. Quarter, cloth. Third Edition, revised		3/6
<b>HOW TO TEACH TYPEWRITING.</b> By KATE PICKARD, B.A. (Lond.). Crown 4to, cloth	Net	3/6
<b>PRACTICAL COURSE IN TOUCH TYPEWRITING.</b> By C. E. SMITH. English Edition, revised and enlarged. Size 8 1/2 in. by 4 1/2 in.		2/-
<b>PRACTICAL TOUCH TYPEWRITING CHART.</b> Size, 30 in. by 40 in.	Net	2/6
<b>REMINGTON TYPEWRITER MANUAL.</b> For Nos. 5 and 7, 10 and 11. With Exercises and illustrations. Ninth Edition. Large post 4to	Net	2/-
<b>THE UNDERWOOD TYPEWRITER MANUAL.</b> By A. J. SYLVESTER. Large post 4to		2/6
<b>BAR-LOCK TYPEWRITER MANUAL.</b> (Group System of Touch Typewriting). By H. ETHERIDGE. Large post 4to		2/-
<b>INSTRUCTIONS ON THE REMINGTON</b> (Nos. 7, 8, 10 and 11), YOST (No. 10), and <b>BARLOCK TYPEWRITERS.</b> Each, demy 8vo		6d.
<b>MODERN TYPEWRITING AND MANUAL OF OFFICE PROCEDURE.</b> By A. E. MORTON. 6 1/2 in. by 9 1/2 in., cloth		5/6
<b>A TYPEWRITING CATECHISM.</b> By MRS. SMITH CLOUGH. In large post 4to	Net	3/6

**PERIODICALS**

<b>PITMAN'S JOURNAL.</b> Subscription, which may begin at any time, 15/2 per annum, post free. (Estab. 1842). 240 p.	Weekly 3d., by post	4d.
<b>PITMAN'S SHORTHAND WEEKLY.</b> (Estab. 1802.)	Weekly 2d., by post	2 1/2d.
<b>BUSINESS ORGANISATION AND MANAGEMENT.</b> Monthly 1/8 net, by post		
Annual Subscription.	Net	15/-

\* Pitman's Complete Commercial and Shorthand Catalogues containing FULL particulars of these and other important works will be sent post free on application.





